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CULTURAL AND PALEONTOLOGICAL RESOURCES

Federal Oil Shale Lease TRACT C-b

by Calvin H. Jennings

prepared for
Atlantic Richfield Company, Operator

March 1975



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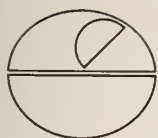
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CULTURAL AND PALEONTOLOGICAL RESOURCES OF FEDERAL OIL SHALE
TRACT C-b, RIO BLANCO COUNTY, COLORADO

Abstract

As a part of the environmental studies made in preparation for the development of Federal Oil Shale Lease Tract C-b, a program of archaeological reconnaissance was undertaken in August 1974 to determine the nature and significance of cultural resources that may be present on the tract. This project supplements a less intensive reconnaissance of the tract carried out in 1973. In both the 1973 and 1974 studies, the field work and analysis were carried out under the supervision of Calvin H. Jennings, Laboratory of Public Archaeology, Colorado State University.

The 1973 project located one prehistoric site and one site of historic affinity. Both sites are outside but immediately adjacent to the tract boundaries. The 1974 reconnaissance recorded three more prehistoric sites, all within the tract's perimeter. In addition, a number of isolated artifacts were collected in the 1974 effort, and two paleontological sites were reported by members of a geological team associated with a core-drilling program.

The significance of the paleontological resource is best determined by trained paleontologists, but the discovery of the remains of long-extinct fauna does indicate the presence of a previously unrecognized resource in the tract vicinity. The cultural materials indicate human occupation of the vicinity from about 5000 B.C. to the mid-twentieth century. The cultural resource is regarded as having scientific value in that the information present in some of the sites

on the tract may help to clarify our understanding of man's use of the Piceance Basin over a period of several thousand years. However, none of the sites are deemed to have either national or regional significance when compared with other sites already recorded for the region. No nominations for the National Register of Historic Sites will be made from the inventory of Tract C-b sites.

Mitigation of the impact of development is recommended in the form of test excavations at two of the prehistoric sites, 5RB136 and 5RB146, if they are to be directly endangered by tract development. If no direct disturbance of the sites is anticipated, the only action necessary will be the posting of the sites to warn off vandals and others who might damage or destroy the sites. No further action at the remaining three sites is necessary. It is also recommended that the areas immediately adjacent to the tract (up to a distance of 1 kilometer) be systematically reconnoitered in the event that development of the tract is imminent, so their site content can be better estimated. There is a strong likelihood of secondary impact in the areas surrounding the tract, and some effort should be made to clarify the nature of the cultural resources in the area before they are disturbed.

No explanation is offered here for the lower site density of Tract C-b as compared with other parts of the Piceance Basin. Hypotheses concerning the differential in prehistoric settlement must await completion of the description of the resource base in other parts of the basin and the analysis of the settlement pattern in those areas.

INTRODUCTION

LOCATION

The study area, Federal Oil Shale Tract C-b, is in Rio Blanco County, Colorado, about 20 miles west of the community of Rio Blanco. The tract comprises about 5100 acres south of Piceance Creek and between Willow Creek and Stewart Gulch (Figure 1).

PROJECT ORGANIZATION

The baseline study of the cultural resources of the Oil Shale Tract C-b was initiated by the Laboratory of Public Archaeology at Colorado State University at the request of Woodward-Envicon, environmental consultants, on behalf of Atlantic Richfield Company, Operator. The study was undertaken to fulfill the Lease Environmental Stipulations set forth by the Bureau of Land Management (USDI, 1973).

Sec. 6. Historic and Scientific Values. (A) Cultural Investigations. The Lessee shall, prior to construction or mining, conduct a thorough and professional investigation of any portion of the Leased Lands to be used, including, but not limited to, those to be used for mining, processing, or disposal operations or roads, for objects of historic or scientific interest, including, but not limited to, Indian ruins, pictographs and other archeological remains. The Lessee shall report the results of these investigations of the Mining Supervisor before commencing construction and mining operations.

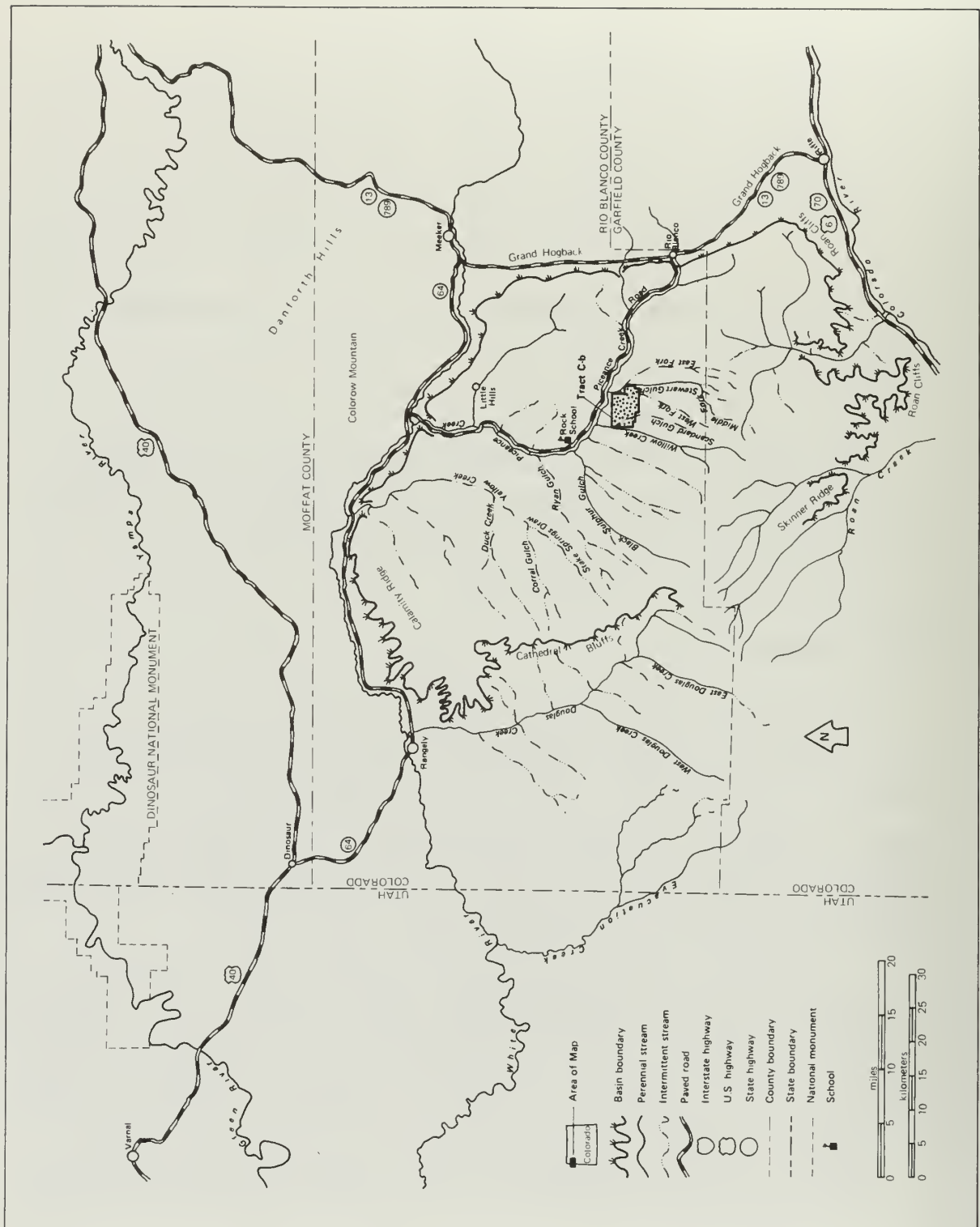


Figure 1. THE PICEANCE BASIN AND SURROUNDING AREA

(B) *Objects of Historic or Scientific Interest.* The Lessee shall not in any activities under this lease appropriate, remove, injure, deface, or alter any object of antiquity, or of historic, prehistoric, or scientific interest, including, but not limited to, Indian ruins, pictographs, and other archeological remains. Where a question exists as to whether or not an object is of historic, prehistoric, or scientific interest or is an object of antiquity, the Lessee shall report to the Mining Supervisor for a final determination of which he shall inform the Lessee without unnecessary delay.

The purpose of the project was to identify sites of past human activity in the tract environs, to relate them to contemporaneous activities in the region, and to assess the scientific value and historical significance of each site. This information will be used by Atlantic Richfield Company in preparing the final development plan so that valuable or significant resources are not lost but are instead preserved for future generations.

Initial planning was done in the early spring of 1974. The proposal for the study of the cultural resources of the tract was made to Atlantic Richfield Company in May 1974. An orientation meeting was held in Grand Valley, Colorado, in July 1974. Final clearance to begin the archaeological study was given on August 1, 1974, at which time the following individuals, under the supervision of the author, C.H. Jennings, began an intensive investigation of the tract. The field crew included Morris R. Anderson, Gerald A. Bair, William I. Berg, Donna C. Daniels, Catherine L. Holder, Anne P. McNamara, Janet L. Pierson, Kim G. Pinketon, and David A. Weber. Bair and Berg have had extensive field experience both in the Piceance Basin and in other areas of North America. These two men assisted Jennings in the supervision of the crew. The rest of the crew members have completed at least one season's field work in archaeology. All had worked in the Piceance Basin and were familiar with the local archaeological situation.

Field work was conducted between August 1 and 11, 1974. A total of 56 man-days of effort were utilized and 2640 acres were intensively examined. The work was concentrated in approximately 52 percent of the total tract area of 5094 acres. The field work was carried out under Federal Antiquities Permit 74-CO-055, issued through the Craig District of the Bureau of Land Management.

A quadrat system which utilizes quarters of public land survey sections as the sampling unit was used for the field survey. The quadrats were laid out in a checkerboard pattern rather than being randomly selected, on the premise that a more representative pattern of site distribution could be gained by use of the regularized distribution over the tract area. A description of the methods employed is given below under Reconnaissance Methods.

The results of the examination of Tract C-b include the discovery of three previously unrecorded sites within the tract boundaries. These sites were designated 5RB136, 5RB146, and 5RB147 in the Archaeological Survey of Colorado site inventory. Sites 5RB136 and 5RB146 are in the northeastern portion of the tract and 5RB147 is in the northwestern corner (Figure 2).

In addition, two sites were recorded in an earlier study of the vicinity of the tract (C. H. Jennings, 1974): 5RB67, in the Middle Fork of Stewart Gulch in the NE $\frac{1}{4}$ of Section 21; and 5RB69, near the confluence of Willow Creek and Piceance Creek in the NW $\frac{1}{4}$ of Section 36, T2S, R97W. No other sites have been recorded in the immediate vicinity of Tract C-b, owing in part to the lack of systematic archaeological reconnaissance in the area.

OTHER ARCHAEOLOGICAL STUDIES

The only other archaeological work done in the Piceance Basin, prior to 1974, was carried out by Colorado State University in cooperation with Thorne Ecological Institute of Boulder, Colorado.

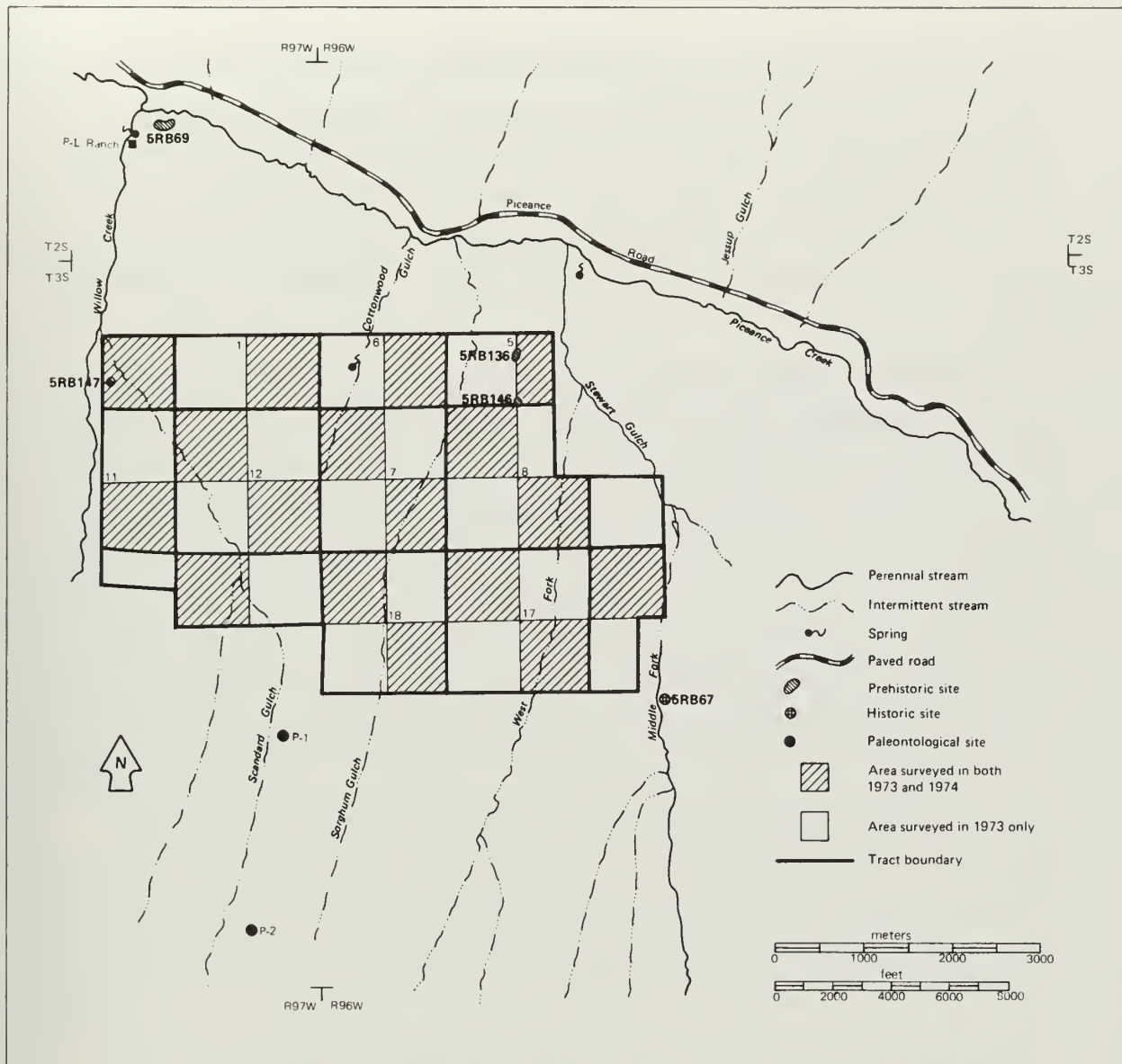


Figure 2. ARCHAEOLOGICAL AND PALEONTOLOGICAL SITES, TRACT C-b AND VICINITY

The project was done as a part of the Regional Oil Shale Study for the Colorado Department of Natural Resources (Thorne Ecological Institute, 1974). Tract C-b was given a reconnaissance-level examination by the CSU archaeological team during the summer of 1973 (C. H. Jennings, 1974). The sites located in this initial examination are the ones mentioned above and are located outside the tract boundaries.

During the summer of 1974, with the acceleration of interest in the development of energy resources in the United States, there was an increase in activity in the Piceance Basin. Studies of the region's cultural resources grew in response to the requirements for cultural resource conservation associated with federal and state land management statutes. During 1974 field work continued on the Regional Oil Shale Survey, and the University of Denver and Southern Colorado State College also placed survey crews in the region. The University of Denver team was working under contract with the operators of the Oil Shale Tract C-a and concentrating its efforts in the Corral Gulch-Box Elder Gulch area of the basin. The team from SCSC was working under contract with Superior Oil Company in the area between Yellow Creek and Piceance Creek on the northern edge of the Piceance Basin. Since reports from these two efforts are not yet available, their results cannot be compared with the finding of the Tract C-b survey.

The reexamination of Tract C-b in 1974 was conducted to verify the results of the 1973 study. As noted above, three new sites were located which had been missed during the 1973 reconnaissance. The disparity between the two efforts results primarily from the difference in levels of intensity of ground examination between the two projects. The 1973 project covered the Tract C-b area and the area between the northern boundary of the tract and Piceance Creek, utilizing an effort of 30 man-days. Roughly a third of the area examined in 1973 was

reexamined in 1974 utilizing an effort of 56 man-days. Clearly, the 1974 effort reported here was much more intensive and therefore more likely to discover the relatively small and difficult-to-detect sites that are described below.

RECONNAISSANCE METHODS

Each of the sample quadrats was examined by a party of three or four people. The party began its coverage of the quarter-section at a section corner or a quarter-section marker. The party covered each of the quadrats in a series of sweeps made by walking abreast about 30 meters apart. This spacing, of course, varied with terrain and vegetation conditions. Areas with greater than 15 percent slope were not given intensive investigation, since previous surveys of similar slopes elsewhere in the Piceance Basin have failed to yield any material of interest (sheet erosion would have removed anything that might have been there).

All sites encountered were recorded on Archaeological Survey of Colorado site inventory forms (Appendix A). Surface collections were made without any attempt at systematization or standardization of area of coverage, since none of the sites had enough artifacts to warrant such procedures.

All the artifacts were catalogued in the Colorado State University system (Appendix B) and are presently stored there. Analysis was limited to simple morphological description, since no single potential type was represented by more than a single specimen.

ENVIRONMENTAL BACKGROUND

In order to understand man's activities in the Piceance Basin in antiquity it is necessary to outline the nature of the environment from which he extracted his raw materials and food and with which he had to cope in guaranteeing his continued survival in the region. Preindustrial man faced more immediate short-term environmental constraints than his modern counterpart. Because he had to be self-sufficient within a very limited geographic area, intimate knowledge of the resources of each microenvironmental unit within his reach was mandatory. Failure to realize the potential of each element of his environment meant either extinction or loss of the territory to some other group capable of exploiting the otherwise unrecognized potential of the area.

Preindustrial man's sensitivity to environmental constraints gives considerable value to general environmental information as a tool for reconstruction of ancient man's activities. Consequently, no discussion of the archaeology of a locality is complete without a description of the nature of the environment that points up those elements which may have had value to, and impact on, prehistoric man.

TOPOGRAPHY

The surface of Tract C-b is made up of a series of interfluvial ridges which trend basically north-south. The streams forming these ridges are moderately incised into the sandstone bedrock of the area.

The major drainages such as Willow Creek, Scandard Gulch, and the main stem and West and Middle forks of Stewart Gulch have formed steep-walled canyons, the bottoms of which are 100 to 250 feet below the intervening ridge crests. There are also drainages of intermediate depth, such as Cottonwood Gulch and Sorghum Gulch and a number of lesser unnamed gulches which are generally less than 150 feet below the adjacent ridge tops but which contribute to the rolling nature of the landscape.

The location of the tract south of Piceance Creek and the general downward slope of the bedrock from south to north in that locality place the higher elevations on the tract at its southern boundary and the lower elevations on the north side of the tract. The highest elevation on the tract is at the southern boundary on the ridge between Sorghum Gulch and the West Fork of Stewart Gulch, where the crest elevation is slightly over 7100 feet. The lowest elevation on the tract is at the mouth of Scandard Gulch at slightly over 6400 feet above sea level. Outside the tract area is Piceance Creek which has flood-plain elevations ranging between about 6260 feet above sea level at Willow Creek on the west to 6360 feet at Stewart Gulch on the east.

Generally, the topography of the area can be described as having rounded to flat ridges separated from one another by moderately deep canyons and gulches. The ridges trend north-south and drop gently downward from high points in the south to lower elevations in the north. The ridges terminate outside the tract to the north in bluffs overlooking Piceance Creek. The drainage bottoms are deeply dissected by arroyos which have cut through alluvial fans encroaching across the floors of the canyons. This is most evident in Stewart Gulch and its various forks, in Scandard Gulch, and in Willow Creek.

Tributaries to the northward-flowing drainages, which empty into Piceance Creek, have scalloped the ridge margins, making embayments in the canyon walls along the major drainages. These features give local deviation from the general pattern described above and serve to increase the varieties of topographic exposures on the tract.

In relation to the needs of prehistoric man, the topography of the tract would have provided excellent sites for well-sheltered camps that would receive ample sunlight. The ridges and drainages alike would have provided easy routes of travel from Piceance Creek to the Roan Plateau on the south. East-west travel in this part of the Piceance Basin would have been most likely directed along Piceance Creek, but the ridges and shallow canyons south of the stream's course would certainly have not provided a major barrier to communication.

GEOLOGY

The geology of Tract C-b would have been of relatively little interest to the aboriginal users of the area, except for the uppermost element in the bedrock stratigraphy and the effects that the structure of the basin and the permeability of the beds underlying the surface would have had on the availability of the surface water.

The uppermost member of the basin's deposits is a buff to light brown sandstone with elements of marlstone, siltstone, and shale (Cashion and Donnell, 1974:G3; Donnell, 1961:857-858). This deposit was originally assigned to the Green River Formation (Bradley, 1931). However, reexamination of the lithology and shale oil contents of the Parachute Creek member and Evacuation Creek member and comparison with the A horizon of the Uinta Formation have led Cashion and Donnell (1974) to reject the validity of the association of the buff sandstone with the Green River Formation in favor of placing it in the lower

portions of the Uinta Formation. Consequently, the term used in this report for the buff cap overlying the Parachute Creek member and contributing to the rounded hilly topography described above will be "Uinta A."

The Uinta A is of importance to the student of past human behavior in the study area because of its potential, or lack of it, for providing raw materials for tool manufacture. The sandstone is also important because of the nature of its weathering characteristics and the effect they have on the availability of natural shelter in the region.

The sandy nature of much of the Uinta A that is exposed in the tract vicinity makes it a suitable material for use as milling stones for pinyon nuts, acorns, and various grass seeds. We have some evidence of such use of the sandstone for these purposes. Given the wide distribution of the source material over the basin, this evidence is much more limited than was expected. It seems likely that the relative softness of the stone and its tendency to wear rapidly may have made it a less desirable material for the preindustrial inhabitants of the region.

Clastic inclusions of cryptocrystalline materials suitable for stone tools are rare in the Uinta A. Consequently, the aboriginal users were forced to either travel or trade for the raw materials from which their arrowheads, scrapers, drills, and knives were made. A few amateur collectors have reported finding tools chipped from oil shale. These tools are very rare, and if we are to accept rarity in this case to imply a lack of popularity or importance then we can reject the Parachute Creek exposures where the oil shale is accessible as being economically important in prehistoric times.

The A member of the Uinta Formation lacks the capacity to form large rock shelters or caves which could have been utilized by the hunters and gatherers who exploited the resources of the basin before the coming of the Euro-Americans. Consequently, there is little

likelihood of finding sites in the region that have the well-preserved perishables such as leather goods, basketry, feather work, and the like, that are usual in rock shelters in areas with a similar climate. The lack of rock shelters in the Uinta A also has implications for the way in which campsites were positioned. The presence of other sorts of natural shelter, such as prominent elevations and dense stands of trees, would have become a more important consideration in site selection.

At another level, the geology is of importance in understanding the historical significance of the Tract C-b locality. The problem lies with a time period considerably predating the earliest possible date for man's entry into the region. The era in question is the time when the Uinta A was being laid down in the Middle Eocene (Osborne, 1929) or roughly between 55 and 60 million years ago. The Uinta A beds of the area west of Rangely, Colorado, along the White River were originally identified by O.A. Peterson (Osborn, 1895:72-74). The beds were found to be nonfossiliferous, and recent geologic studies in the Piceance Basin (Donnell, 1961:858) did nothing to change that opinion. However, other formations of similar age to the Uinta A have produced large mammalian assemblages, so the presence of fossil materials is to be expected, or at least should be considered. As will be seen below, the fact that such material has been recovered indicates that the barren Uinta A deposits were so only because of the limited amount of work that has been done on the region's paleontology.

HYDROLOGY

The hydrologic aspect of the Tract C-b environment is one of the most important elements in prehistoric and early historic man's utilization of the region. Unfortunately, the hydrologic situation in any area has great potential for variation over time spans of interest

to archaeologists. Springs can rise and dry up within a few years; streams dependent on the same sources of moisture as the springs must also then fluctuate. Because of such variability, considerable caution must be used in applying knowledge about present hydrologic conditions to the past, especially to the distant past.

Recently there has been considerable interest in the Piceance Basin's hydrology because of the bearing that groundwater quality and quantity will have on the development of energy extraction industries in the region. Consequently, there is abundant information on the nature of the basin's ground- and surface waters. The work of the U.S. Geological Survey (Coffin et al., 1968, 1971) and Meiman (1973) for the Regional Oil Shale Study indicate that surface water is available year round and that it is abundant in the early spring following the melt of the winter snow. Convectional thunderstorms in the summer can also bring short periods of abundant water.

In the immediate vicinity of the tract are three drainages of potential prehistoric significance: Piceance Creek, Stewart Gulch, and Willow Creek (Figure 2). Unfortunately, records of stream flow are not available for either Stewart Gulch or Willow Creek, and the gauging stations for Piceance Creek are too distant from the mouths of these two streams to permit inference of their discharge rates and seasonal flow patterns. Casual observations made by people associated with the archaeological surveys done in the tract area during 1973 and 1974 indicate that Willow Creek does flow year round, at least under the present climatic regime and water table conditions. The flow of water in Stewart Gulch seems much less stable. Surface flow has been observed in the Middle Fork near the southeastern corner of the tract. The Jessup Gulch quadrangle 7.5-minute topographic map indicates that there is permanent flow in this portion of the drainage. Also, the *Hydrologic Investigations Atlas* (Coffin et al., 1971) indicates the presence of a spring along the Middle Fork about 2 miles south of the tract supporting this flow. However, the atlas indicates that all

the forks of Stewart Gulch, and Willow Creek as well, are ephemeral streams. To reconcile the archaeologist's casual observations with those of the professional hydrologist is beyond the scope of this study, but it is our inclination to accept the evidence of our own observations and assume that, at least in recent years, surface water has been available on segments of Stewart Gulch and its Middle Fork and on Willow Creek.

The map prepared by Coffin and his associates (1971) also indicates the presence of springs in the following localities (Figure 2): near the mouth of Willow Creek in the NE $\frac{1}{4}$ NE $\frac{1}{2}$ of Sec. 35, T2S, R97W; on Willow Creek about 2 miles above the confluence with Scandard Gulch in the NW $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 14, T3S, R97W; on Cottonwood Gulch in the NE $\frac{1}{4}$ SW $\frac{1}{4}$ of Sec. 6, T3S, R96W; and at the mouth of Stewart Gulch in the NE $\frac{1}{4}$ NE $\frac{1}{4}$ of Sec. 5, T3S, R96W. These localities may have been occupied more regularly than areas more distant from water supplies.

The uncertain elements in the groundwater picture have been outlined. Given more moist conditions in the region, it is likely that at least some, if not all, of the sources so far described would have provided supplies of readily accessible surface water for early users of the basin. Some of these sources have at least been detectible to the researchers working on the area's hydrology and probably would have also been of at least some use to early man during times when hydrologic conditions in the area approximate those of the present. Consequently, we would expect to find elements in the distribution pattern of prehistoric communities which reflect the availability of these water sources at various times throughout the period of human occupation of the tract area. One element of possible disruption of this response to the marginal sources of water is in the perennial flow of Piceance Creek, located only about 900 meters north of the tract at its nearest approach. Marginal water sources may have had relatively little value in the context of the larger, though seasonally highly

variable flow in Piceance Creek (Meiman, 1973:5). Domestic settlements may have been situated for the best access to Piceance Creek, given the constraints of shelter requirements and access to other critical resources. Piceance Creek gains in flow in the vicinity of Tract C-b (Coffin et al., 1971), indicating that perhaps even in periods of reduced precipitation the surface flow in the creek near the tract was great enough to provide adequate water for the low population densities characteristic of preindustrial societies in other parts of the world.

CLIMATE

Climatic information for the Piceance Basin in general is quite limited. There is a series of records (1890-1974) from Rangely, about 36 air miles northwest of Tract C-b, and from Meeker, about 22 air miles to the northeast. There has been no systematic year-round record keeping in the basin itself except at the Little Hills Game Experiment Station about 13 air miles north of the tract, where records of daily maximum and minimum air temperatures have been kept since 1946. Measurements of noon wind conditions have been made at Little Hills since 1971 for use on the fire weather network but no record of these measurements has been kept.

Marlatt (1973:4) also reports that records have been kept from an unofficial weather station at the Rock School, located at the confluence of Black Sulphur Gulch and Piceance Creek, and at a number of other special-purpose stations operated by private parties. He feels that the standardization of station layout and instrument calibration among these various stations was not adequate to permit comparison of the various sets of records. He also points out that in many cases the stations were so established as to have been significantly influenced by topography, vegetation, and cultural features and therefore produced biased records.

Precipitation figures from Little Hills show a mean annual precipitation of 12.90 inches (328 mm) for a 20-year period of record between 1951 and 1970; between a third and a half of the annual total is probably derived from snowfall (Marlatt, 1973:5, 6). Snowfall tends to be distributed fairly evenly over the region, though the actual amounts vary with elevation. The rainfall amounts for any given locality in the basin vary considerably from year to year. The summer precipitation comes primarily from convectional thunderstorms rather than regional storms; but the thunderstorms are unreliable sources of precipitation for any specific area because they are so concentrated. The basin's topography also undoubtedly plays a role in directing the paths of these storms.

As with the hydrology, the absence of adequate records forces the use of casual observations made without either adequate technical training or suitable observational techniques in applying what documentation exists for Tract C-b and vicinity. Two years of observation during the summer months without adequate documentation leave the impression that the Tract C-b locality generally receives more precipitation than the Little Hills area. This may be in part due to the slightly higher elevation of the tract vicinity relative to the Little Hills station.

Whatever the actual numerical difference, annual precipitation at Tract C-b probably will not be above 15 inches (381 mm) on the average for any extended period of measurement.

Air temperature is somewhat more predictable. The Little Hills Station, for the 1951-1970 period of record, had an annual mean of 42.7°F (5.9°C). The roughly 400-foot (122-meter) difference in elevation between this station and the Tract C-b vicinity would account for a minor difference in air temperature. The average seasonal extremes for Little Hills are 21.2°F (-5.9°C) in January and 65.8°F (18.8°C) in July (Marlatt, 1973:9).

The climate in the Piceance Basin, and specifically the Tract C-b vicinity, can be classified as mid-latitude steppe. Conditions are generally cool and semiarid. The growing season for the area, estimating from Marlatt's study (1973:11), must be less than 100 days and more than 45 days--and is probably closer to the former. The winters can be severe, with long periods of low temperatures. The summers can be warm, but temperatures seldom go above 100°F (38°C). In general, the climate in the region is not severe enough to have limited human occupation, except perhaps during the period from late or mid-December through February. The climate may, however, have had considerable impact on the kinds of subsistence activities pursued by the prehistoric inhabitants.

SOILS

The soils of the region have been studied by Fox (1973); they are of interest to the archaeologist because of their impact on agriculture. Fox (1973:19) describes the soils as being predominantly cool to cold and calcareous or alkaline, except where there is coniferous vegetation and an acid condition exists on the surface.

Regional soil conditions are not suitable for most agricultural use. The upland soils are thin and are too low in temperature. The alluvial soils along the drainages are warmer and permit the cultivation of alfalfa or timothy where adequate irrigation water is present. Generally, however, the area has a low agricultural potential.

VEGETATION

The tract vegetation represents a resource which must have been of great importance to the aboriginal users of the area. Vegetable products were a major part of the diet of the early occupants of western North America. In addition, plants provide a wide variety of raw materials from which tools, medicines, and nonutilitarian objects were made.

Some of the vegetation present in the basin is of well-known economic importance in the aboriginal exploitative systems.

Ferchau (1973:1) describes the vegetation pattern in the basin as being "mosaic-like." He sees in the region a great deal of floral diversity and, therefore, a considerable diversity and abundance in the animals of the region. Ferchau identified eleven different plant communities in the basin. He identified these communities as the following: Douglas fir, spruce-fir, aspen, mixed shrub, big sagebrush, mountain mahogany, greasewood, wild rye, Indian rice grass, pinyon-juniper, and Cathedral Bluffs. Serviceberry, Gambel oak, and snowberry dominate the mixed shrub community. The pinyon-juniper community is seen to vary from almost pure stands of pinyon to stands with one or two species of juniper and no pinyon. The proportions of the two genera are highly variable, depending on soil development, aspect, and availability of moisture.

Tract C-b is represented mainly by pinyon-juniper, chained pinyon-juniper, big sagebrush, mixed shrub, and bunchgrass communities. The pinyon-juniper and mixed shrub communities are of the greatest interest here because of their potential economic value to societies that subsisted by hunting and gathering. In the Tract C-b vicinity the natural vegetation pattern has been recently disrupted by the destruction of large portions of the pinyon-juniper community on the ridge tops. The destruction was carried out by the Bureau of Land Management as part of a range improvement project in the basin. The situation was further complicated by the extraction of the pinyon from the tract area by a group of commercial woodcutters for sale as firewood. The woodcutting makes the estimation of the density of the total stand and the proportion of pinyon somewhat less reliable than would otherwise be the case. However, it is readily apparent to even the casual visitor to the tract that the stand of trees was quite dense and that pinyon accounted for a considerable portion of the total stand.

Before the chaining of the pinyon-juniper from the ridges, the mixed shrub community accounted for much less of the tract area than is the case at present. The big sagebrush community is represented along the bottoms of the canyons, where it has been disturbed in places by clearing for irrigated pastures and hay meadows.

The aboriginal situation is not easily reconstructed from what we see in the present distribution of flora in the tract area. The recent disturbance of the plant communities by man and the introduction of livestock have no doubt changed the vegetation of the area to some extent. Also, human encroachment on mule deer ranges in areas such as the White River Valley may have served to increase the deer populations in the Piceance Basin to anomalously high levels, thereby increasing grazing pressures on the plant communities.

The most reasonable statement that can be made concerning the plant resources of the tract area is that the same species present now were quite likely present in the recent past. Though their proportionate representation cannot be reliably reconstructed from the presently available data, the availability of the resources can be determined.

The most important of these resources was most likely the pinyon crop. The nuts of the pinyon were widely exploited over the pinyon's entire range, and they still constitute an important resource to many American Indian groups. The nut is an excellent source of protein and provides 3250 kilocalories per pound in food energy. The pinyon crop provides a storable food source at a time of year when other resources are less abundant. Since the nut requires no complicated processing or elaborate equipment for its storage, it is readily available for the winter months when other food sources are restricted or nonexistent.

The serviceberry crop was also of some importance to the Indians of Colorado. The berry was eaten unprocessed or was pounded together with meat in a form of pemmican.

The pinyon and serviceberry crops, then, would have provided at least some attraction for early man in the Piceance Basin. These plants are available on Tract C-b and vicinity and help to account for the presence of prehistoric sites in the locality. Because this attraction would have been only seasonal, occupation of the area would have fluctuated accordingly.

WILDLIFE

Wildlife species in the Piceance Basin are abundant and highly varied (Cringan, 1973). There are 82 species of mammals and 258 species of birds reported for the Piceance Basin; fish and other cold-blooded vertebrates appear in smaller numbers and with less variety.

The mammals include 27 species which would have been of value to preindustrial man. Horses were introduced to the basin in relatively recent times and would not have provided a resource for any except the most recent prehistoric inhabitants of the region. Even for these later inhabitants of the area, Tract C-b and vicinity would have held no interest with respect to wild horses, since the tract is well outside the present range of the wild herds. Bison are less well understood. There was a herd present in the basin as late as the summer of 1973. They had been introduced by the Colorado Division of Wildlife and were removed late in 1973 or early in 1974 after numerous complaints from local ranchers. Whether bison were present in the region prior to this time is not known. The area provided good range for the introduced herd, and earlier bison would probably have done reasonably well in the area.

Aside from the bison and the wild horse, the rest of the economically significant mammals were all likely present in the basin in prehistoric times and would have been accessible in the Tract C-b vicinity. Mule deer are extremely abundant now, and though the present

numbers may be somewhat affected by the reduction of their former winter range outside the basin, it seems likely that the ancient winter deer populations were comparable with those of the present. It has been widely reported that the basin now supports the largest winter deer herd in North America. Elk also winter in the basin, but their populations do not reach the magnitude of the deer populations.

Waterfowl, grouse, doves, and possibly even turkeys, are also part of the economically significant fauna. Their numbers in pre-historic times cannot be easily reconstructed, but they were most likely part of the resource base for aboriginal man.

Faunal resources for Tract C-b and vicinity, then, would have been adequate to permit at least seasonal if not year-round use by hunters and gatherers. None of the game animals noted by the biologists lend themselves to mass hunting except the hares and rabbits, and these only during periods of population explosion. Consequently, we expect to find no use of the bluffs, canyon walls, or arroyos as jumps, pounds, or drives. Hunting in the region would have been based on individual rather than group effort and would not have encouraged the formation of large groups for any purpose except possibly rabbit drives.

SUMMARY

This brief description of the environmental background of the Piceance Basin and Tract C-b vicinity indicates that there are no reasons why prehistoric man would have been prevented from occupying the region, and the tract vicinity in particular. In fact, there are some elements in the area's environment which would have encouraged at least seasonal use of the tract and the immediately adjacent areas.

Surface water seems to be available throughout the year, though there are considerable seasonal fluctuations. Raw materials for most

kinds of stone tools are absent from the region, but wood and various animal products are readily available now and probably were so in the past. The climatic regime, if similar to that of the present, would have placed a premium on shelter during the winter months. During other parts of the year people could have either done without shelter or made do with only the most rudimentary artificial windbreaks.

Dietary resources are varied and relatively plentiful at the present and in all probability were so in recent prehistoric times. The late summer and fall is now the period of greatest abundance and easiest procurement, and most likely was in the past as well. At that time of year the berry and pinyon crops are ripe and deer and elk move into the region from their summer ranges. Water supplies are most limited at that time of year but begin to increase in late fall; this may have been the major factor limiting human population density.

Generally, Tract C-b and its immediate vicinity are similar to other parts of the Colorado Plateaus physiographic province. The Colorado Plateaus have had a lengthy and varied history of human occupation. The resources of the Piceance Basin are nearly identical to those of such areas as the Coconino Plateau and the Defiance Plateau of northern Arizona. These two localities both supported occupation by humans at least as early as 2000 B.C. and were the scenes of the rise of two different cultural traditions. The oil shale country of Colorado, then, may also be a culturally rich area.

PALEONTOLOGICAL RESOURCES

Prior to this study it was believed that the Piceance Basin did not have any paleontological resources. However, geological field workers carrying out other studies discovered mammalian fossils at two different places in the vicinity of Tract C-b (Figure 2). The fossils were forwarded to the author, who then passed them on to the Director of the University of Colorado Museum, Dr. Peter Robinson. Dr. Robinson is a trained paleontologist who has considerable experience in western Colorado.

Robinson has reported (personal communication) that one of the fossils is an as-yet-unidentified mammal and that the other is apparently the "head of a femur of a Uintathere, probably *Uintatherium*," but he goes on to caution that more detailed studies are necessary before a definite identification can be made.

This evidence indicates that Tract C-b does have paleontological potential. The most obvious facet of the resource is that it may help to further clarify the historical geology of the region. The presence of *Uintatherium* in the buff sandstone capping the tract locality would serve to further substantiate the redefinition of the Green River Formation by Cashion and Donnell (1974).

The only recommendation we feel qualified to make is that a trained paleontologist examine the specimens recovered thus far and formulate a conservation plan. Archaeologists are not properly trained to engage in paleontological work.

SYNOPSIS OF THE REGION'S CULTURES

PALEOINDIAN PERIOD: ? - 7000 B.C.

Man may have entered the New World as early as 30,000 years ago, near the end of the last glacial period of the Pleistocene. He must have been heavily reliant on hunting for his subsistence, with vegetable products playing a relatively minor role. The animals hunted included many species now extinct, such as the Columbian mammoth and *Bison antiquus*. Reliance on migratory herd animals placed a high premium on community mobility, and the Paleoindians followed a nomadic way of life. The remains of their settlements are difficult to detect and, once located, are usually associated with the remains of their prey.

There is no known evidence of Paleoindian occupation in the Tract C-b region. In fact, for all of western Colorado and the immediately adjacent portions of eastern Utah and southwestern Wyoming there are only five documented discoveries of artifacts or other remains which can be associated with this time period. The UP mammoth kill site in southern Wyoming (Irwin et al., 1962) indicates a possible Llano culture intrusion from the High Plains, but because none of the diagnostic Clovis points were found, the cultural affinities of the hunters are unclear. Also, several Folsom points have been reported from various parts of western Colorado (Bair et al., in preparation; Huscher, 1939:39; Steward, 1933; Wormington, 1955:120).

Consequently, we are left with a situation wherein there are indications that a Paleoindian site or sites may be found in the Piceance region but with no direct evidence of such in hand. However, the absence

of evidence of either proboscideans or bison in the Piceance Basin's fossil record--if we can use such negative evidence at all--indicates that the resources which would have attracted Paleoindians to the region were either not present or not present in large enough numbers to have met the hunter's subsistence requirements. From this evidence, or more precisely the lack of it, it seems unlikely that we will find little if any indication of Paleoindian occupation of the basin.

ARCHAIC PERIOD: 7000 B.C. - A.D. 1776

Climatic changes at the end of the Pleistocene reduced the range of the large animals and caused them to move northward. Along with the climatic and resource distribution changes, the human population of the New World was increasing. The resultant pressures placed an increased value on potential resources that had not been as intensively exploited during the preceding Paleoindian Period. Considerable generalization of subsistence activities took place, and items such as seed plants, various invertebrates, waterfowl, rodents, and the modern big game species took on considerably increased importance in the subsistence base of the Archaic Period occupants of the continent. In each region of the New World different resources were emphasized in the human diet, reflecting differences in availability. However, the pattern of exploitation was the same for all regions: intensive utilization of a wide variety of resources, usually following a seasonal round requiring a transient settlement system. The life style has been widely discussed, but the best-known contributions are those of J.D. Jennings (1957, 1964, 1974).

The sites of this period are generally much easier to locate and produce considerably larger inventories of artifacts than Paleoindian sites. Population of the New World was most likely greater, with an increased number of sites, and sites were reoccupied seasonally over spans of hundreds if not thousands of years. Consequently we have much

more information on the period, and for any given locality or region, there is a greater probability that sites which date from the Archaic will be found. This is true of the Piceance Basin and the neighboring regions.

The Piceance Basin would have been ideal for people pursuing an Archaic mode of subsistence. The wide variety of floral and faunal resources would have proven attractive to earlier occupants of northwestern Colorado, and for this reason, as well as those cited above, many Archaic sites can be expected to exist in the region.

The earliest indication of occupation in the Piceance Basin archaeological record comes from 5RB13, a site in the Stake Springs area, about 16 air miles northwest of Tract C-b. A single basal fragment of a parallel-sided, concave-base, unnotched biface that has pronounced polishing on the margins of the blade near the base was found at 5RB13 (C.H. Jennings, 1974). The point is of a class that has been found in various parts of the western United States. The nearest site producing projectile points similar to the one just described is Deluge Shelter in Dinosaur National Monument (Leach, 1967, 1970a). The earliest occupational levels at the site are estimated to date from 7000 B.C. Breternitz (1970) sees this as the initial Archaic occupation in northeastern Utah and northwestern Colorado.

Following the earliest Archaic, the intensity of occupation increased steadily over the next several thousand years. Sites dating from after 5000 B.C. are numerous both south and north of the Piceance Basin (Breternitz, 1970; Buckles, 1971; Day, 1964; Lister, 1951; Wormington and Lister, 1956). Sites of this antiquity have also been found in various parts of the Piceance Basin, and there is some indication of the utilization of Tract C-b during this and later periods.

The Archaic Period has been extended to A.D. 1776, as there is no evidence of the pursuit of any other life style in the Piceance Basin before the first written documentation of the region's inhabitants.

In the neighboring regions a mixed horticultural and foraging subsistence system was followed in prehistoric times. This system and its associated culture items have been gathered under the title of Fremont culture. The Fremont life style was practiced in Utah and northwestern Colorado at least between A.D. 900 and 1200 but may have appeared as early as A.D. 700 (Aikens, 1970:26-30, 192-194, 202-204; Breternitz, 1970:160-161; Gunnerson, 1969; Wormington, 1955). These people cultivated maize, lived in shallow semi-subterranean houses, and produced a characteristic gray pottery which varied in its surface treatment and temper over the area occupied by the people. People of the Fremont also built stone or adobe granaries for the storage of their crops and decorated the walls of the canyons in their territory with anthropomorphic figures. They also, of course, produced implements necessary for the hunting and gathering that supplemented their horticultural production.

Most of the above-summarized attributes are not as yet evident in the Piceance Basin. Of the portable items, only pottery may be represented. A few shards of a gray ware, which is similar in some respects to Fremont pottery but differs in temper, have been recovered from a few sites in the western and northern portions of the basin but none have been found on or near Tract C-b. There is no evidence of Fremont rock art or architecture. The projectile points which have been found in Fremont sites in Dinosaur National Monument have morphological counterparts in the projectiles found on sites in the Piceance Basin. However, there is little that can be said about the potential significance of the similarities because of the stringent physical constraints that exist for lithic technology. The natural or physical limitations on the variety that can be produced in any inventory of stone tools makes the reliable identification of cultural affiliation of most styles of projectile points impossible.

In the light of the ambiguities and gaps in the archaeological record concerning people of the Fremont in the Piceance Basin, it seems advisable to argue that there was no permanent occupation of the basin

during the time they were present in nearby areas such as Douglas Creek (Wenger, 1956). The Fremont people may well have come into the region in search of game and wild vegetable products, but their presence there would not be separable from that of any other contemporaneous group using the region for the same purpose. Consequently, the Fremont exploitation of the Piceance Basin, if any, is classed as a part of the Archaic Period.

The failure of the Fremont to exploit the region at a horticultural level can most reasonably be attributed to the same causes which have limited agricultural activity in the basin in modern times. The cool to cold soils and short growing season are no doubt the principal restrictive factors. Because of the climate, corn cultivation would have been a highly unreliable source of subsistence.

The pursuit of the generalized hunting and gathering pattern, then, is seen as extending to the time that the first written records were made concerning the people of the Piceance Basin and its neighboring regions. No change occurred in A.D. 1776 insofar as the aboriginal inhabitants of the region are concerned; they were simply identified by Europeans in such a way that we can associate them with the ethnographically known groups inhabiting the region in later times.

PROTOHISTORIC PERIOD: A.D. 1776 - A.D. 1868

In 1776 the Spanish priest Escalante crossed western Colorado on his attempted journey to California. In his trek he encountered bands of Indians whom he identified as Yutas (Bolton, 1950:52-55, 163-167). Escalante did not pass directly through the Piceance Basin. His route took him over the Roan Plateau and down Douglas Creek, west of the basin, to the White River. Though Escalante did not actually encounter Indians on Douglas Creek or on the White River, he had been told that a band related to the Yutas he had encountered farther south did inhabit the region.

The Escalante-Dominguez expedition gives the first evidence of the use of the region surrounding Tract C-b by an ethnographically known group, the Utes. Escalante, however, gives us no information on the way of life of the northern Utes.

In the Piceance Basin several sites have been located which may be the remains of the Ute occupation of the region. These sites, such as 5RB53 (near the confluence of Duck and Yellow creeks), 5RB129 (near the confluence of Big Duck and Little Duck creeks), and 5RB144 (in Black Sulphur Gulch), have produced preindustrial artifactual material but no metal or other goods which would indicate contact with Euro-Americans. These sites also have standing remains of structures, or wickiups, which provided necessary shelter. Two of the sites listed above have also yielded a few shards of plain gray pottery. These sites can be hypothetically assigned to the Protohistoric Ute culture in the light of their material contents. Of course, this hypothesis needs to be tested by means of excavation at the sites to obtain a more complete, and probably more representative, inventory of their material culture.

On Tract C-b we found no evidence of the sites described above. The sites located on and near the tract are either definitely tied to the Euro-American occupation of the area or have no clear ethnographic relationships.

EURO-AMERICAN PERIOD: A.D. 1868 - PRESENT

The first White River Ute Agency was established near the present town of Meeker, Colorado, in 1868. The agency was run in the usual fashion of the late nineteenth century in that there was relatively little interference with Indian daily life so long as the Indians made no difficulty for the Euro-Americans moving into the region.

In 1878 the White River Agency was placed under the direction of Nathan C. Meeker who, through ignorance and well-intentioned paternalistic

blundering, created an extremely volatile situation with the Utes residing in his area of responsibility (Brown, 1972:349-367; Emmitt, 1954; Hafen, 1933:199-204, 209-213; Sprague, 1958). The result of the situation was the massacre of the agency's male personnel and the death of several members of a military expeditionary force which Meeker had called for to assist him in meeting the crisis (Brown, 1972:360-366; Hafen, 1933:209-212; Sprague, 1958).

The White River band was removed from the Meeker district following the 1879 uprising. They were placed on a reservation with the Uinta band and access to their ancestral lands was denied them. However, living occupants of the White River region and the Piceance Basin have told the author that the Utes continued to hunt and gather in the area in the 1890s and early 1900s.

The expulsion of the Utes from the Piceance Basin and surrounding areas precipitated a land rush in the early 1880s, which in turn led to the formation of Garfield County and later Rio Blanco County (Hafen, 1933:226). Homesteading in the Piceance Basin was limited primarily to the areas along the major drainages which had either surface water flow or easily accessible groundwater. The homesteading activity led to the founding of a local school district and the construction of a number of school buildings in various parts of the basin. Perhaps the best known of these is the Rock School, which was built in 1897 and subsequently modified by various remodelings and additions. The Rock School is of interest because of the use of oil shale for masonry material.

During the early part of the twentieth century the fortunes of the homesteaders in the Piceance rose and fell, but the end of the homesteading era came with the economic collapse of the 1930s. Many of the homesteads were abandoned, while others, with perhaps more economic potential, were purchased by the more successful ranchers in the region and were incorporated into land and cattle operations. These operations, some of which are still active, were dependent upon the combination of access to extensive tracts or unimproved range through

the various federal leasing programs and on the supplementation of range feed with hay grown in the privately owned irrigable meadows along the better drainages. These practices continue to the present time.

There has also been a long-term interest in the fuel potential of the oil shale deposits in the region. There is an abandoned mine and retort on Piceance Creek Road about 2.5 miles northwest of Rio Blanco. This mine was operated in the 1920s, but apparently with little success. The potential of an oil shale boom was raised in the 1950s, and the federal government, through the Bureau of Mines, opened a mine and experimental retort at Anvil Points during this time.

On Tract C-b there is little evidence that can be definitely assigned to the Euro-American period. The abandoned cabin, 5RB67, is the only unoccupied Euro-American site in the immediate vicinity of the tract. There was no indication that the Utes penetrated as far as Tract C-b in their postexpulsion forays. The occupied ranches have not been investigated. The fact that they are outside the area of study of this project and that they are still in use has placed them on a very low priority insofar as this study is concerned.

SUMMARY

The Piceance Basin has been the scene of human activity since about 7000 B.C. at the very earliest. Between this early date and A.D. 1879 the area was utilized by various groups of American Indians, who hunted the game of the region and gathered the fruits of its varied flora. None of the groups occupying the region at this time left any indication that they attempted any sort of farming. The last occupants of the region were the Ute Indians, who were in the area at least as early as 1776 and who remained there until forcibly removed in 1879.

Upon the expulsion of the Utes from the Piceance Basin, Euro-American settlers began to occupy the area. The early settlers raised sheep

and cattle in the basin, and the subsequent overgrazing had considerable effect on the landscape. Interest in the minerals underlying the basin has fluctuated during the twentieth century but has never led to any extensive exploitation plans until the present time.

The role that Tract C-b played in the cultural history of the region is not entirely clear. Prior to the discovery of the sites described in Section V there was no evidence that the tract area played any role in the regional history whatsoever. What is clear is that the aboriginal occupants of the Piceance Basin did include the tract vicinity in the territory they saw fit to occupy and exploit. The length of time and the nature of that exploitation and occupation are also discussed in Section V.

CULTURAL RESOURCES

PREHISTORIC SITES

Four prehistoric archaeological sites have been recorded on Tract C-b and in immediately adjacent areas. The tract itself has been intensively examined for antiquities, but in the adjacent areas site discovery has been the result of chance encounters rather than any systematic survey. Considerable caution must be used in any attempt to extrapolate the nature of the cultural resources of the surroundings from what is known of the resources of the tract proper.

5RB69

Location. T2S, R97W, NW $\frac{1}{4}$ NW $\frac{1}{4}$ Sec. 36; north of the tract boundary and about 300 meters east-southeast of the confluence of Willow Creek and Piceance Creek (Figure 3). It is about 250 meters northwest of the nearest approach of the main access road to the tract from Piceance Creek Road.

Topographic Situation. The site is on the northern edge of what appears to be an alluvial terrace (Figure 2) on the south side of the Piceance Creek Valley. It is about 27 meters above the flood plain of Piceance Creek. The site is principally north-facing, but it is also exposed to the east and west because of its relatively distant position from the bluffs which form the southern side of the valley.

Features. No evidence, either direct or indirect, was found to indicate the presence of any stationary objects such as fire pits, house floors, or storage structures.



Figure 3. VIEW OF THE 5RB69 LOCALITY FROM ABOUT 1 KILOMETER UPSTREAM OF PICEANCE CREEK (Arrows indicate site position on terrace rim.)

Condition. The surface and immediately underlying materials have been disturbed to a depth of about 5 centimeters by livestock walking over the site when the soil was wet. The area has been used as a feeding and watering station for cattle in the recent past. There is also a good possibility that the local residents have collected at least some of the artifactual material from the surface. There was no sign of uncontrolled excavation.

Artifacts. Six flakes comprise the total artifactual yield of the site. Two water-worn cobbles, originally thought to be milling stones, were found on the site, but laboratory study indicates that there is no alteration of either cobble from its natural configuration.

Cultural Affinities and Dating. The artifactual yield is too limited to permit any assignment of the site to a time period other than to say that it is Protohistoric or earlier. Culturally, the site can only be said to relate to the Native American occupation of the locality.

Evaluation and Recommendations. This site has been disturbed by modern uses. It lacks any evidence of having been utilized intensively. We can safely say that 5RB69 has neither scientific value nor historic or cultural significance. It is recommended that no further action be taken to protect or conserve this site.

5RB136

Location. T3S, R96W, NE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5; northeastern corner of the tract (Figure 2). The site is located about 1400 meters southwest of the confluence of Stewart Gulch and Piceance Creek, and about 1800 meters southeast of the confluence of Sorghum Gulch and Piceance Creek. The locality is approximately 230 meters north of core hole Cb-3 and 1300 meters south-southwest of the Walter Oldland Ranch.

Topographic Situation. 5RB136 is on the crest of the ridge between Stewart Gulch and Sorghum Gulch and slightly down the eastern side of the ridge. The site is on fairly level ground, though there are very slight downslopes to the north and the east. Though the locality is elevated well above the immediately surrounding terrain, it does not have a good view of any of the surrounding lowlands because of the dense stand of pinyons and junipers on the ridge. The site is topographically exposed to the north, south, and east, but the dense tree cover gives it excellent protection from the wind.

Features. There are no visible features present on the site. However, a few fragments of shattered bone were found which had been exposed to intense heating. Burned bone fragments such as these are frequently found in the fire pits over which preindustrial man cooked his food. It is assumed that such features could be present at 5RB136 and that any disturbance of the immediate surface would expose them.

Condition. The site is relatively undisturbed. The truck trail which climbs up from Sorghum Gulch and travels along the ridge crest cuts across the western edge of the site. There is also a dump of modern trash on the southern end of the site. There is no evidence of disturbance of the deposits, and the condition of the site is deemed good.

Artifacts. The artifact yield at 5RB136 was relatively small. Only seven waste flakes were found, indicating that relatively little stone tool manufacture or repair was done there. A single tool (Figure 4a) was found at the southeastern extremity of the site. It is a bifacially flaked object with no modifications, such as notches, of the blade margins. The blade sides are straight, at least from the base to the point at which the tip was broken off, and the overall form of the object was probably lanceolate. The base shows no signs of grinding and there is only a very slight concavity to the basal margin.

Review of some of the pertinent literature indicates that similar



Figure 4. SMALL CHIPPED STONE ARTIFACTS FROM TRACT C-b

<i>a</i>	5RB136.1	<i>e</i>	IF112
<i>b</i>	5RB146.1	<i>f</i>	IF113
<i>c</i>	5RB146.3	<i>g</i>	IF110
<i>d</i>	IF109	<i>h</i>	IF111

objects have been found in relatively few places. Reasonably close similarities exist between this specimen and types W1 and W42 from Danger Cave (J.D. Jennings, 1957:101, 132). There is also a similar type from Caldwell Village (Ambler, 1966:40, Figure 41b), a Fremont site near Vernal, Utah. The precise degree of relationship with these other examples cannot be established, but it is clear that the Danger Cave types represent a span of several thousand years (J.D. Jennings, 1957:93, Figure 38) and the Caldwell Village type only the time period between A.D. 1050 and 1200 (Ambler, 1966:66).

Cultural Affinities and Dating. The absence of diagnostic artifacts from the 5RB136 inventory makes determination of the age of the occupation or the cultural affinities of the occupants impossible. From the comparison with other sites where similar artifacts have been found, it should be clear that the age of the site could range anywhere from several thousand years to only a few hundred. Any more definite assignment will have to await more intensive study of the site.

Evaluation and Recommendations. The potential of 5RB136 in terms of helping to clarify the timing and cultural relations of the earlier human occupations of the Piceance Basin is not clear. The site may have considerable value if the hypothesized fire pits are in fact present. We would expect to find more cultural material and should also be able to recover materials suitable for radiocarbon dating. This information would be of considerable scientific value.

The cultural and historical significance of the site is another matter. Sites of this sort seem to be numerous in the region and 5RB136 is by no means the best example of the class. Consequently, we would not recommend this site for nomination to the National Register of Historic Sites.

5RB146

Location. T3S, R96W, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5 with some overlap into the NE $\frac{1}{4}$ NW $\frac{1}{4}$

Sec. 8 (Figure 2). The site is located within 50 meters of the quarter-section marker on the boundary between Sections 5 and 8. The site is approximately 730 meters west-southwest of the confluence of Stewart Gulch and its West Fork and about 320 meters south of core hole Cb-3.

Topographic Situation. 5RB146 occupies about the same topographic position as 5RB136. The principal exception is that there is a tributary drainage to Stewart Gulch which has incised itself into the eastern flank of the ridge. The result is somewhat greater exposure to the east than 5RB136 has. Also, there is a small knoll, on which the quarter-section marker is located, to the south of the site. This small elevation gives 5RB146 somewhat more shelter from the south than 5RB136 has.

Features. No features were noted at 5RB146 and there was no evidence which implied the presence of stationary objects.

Condition. The chaining of the ridge tops described in the discussion of the tract vegetation has included the area of 5RB146. The site has been extensively disturbed, except for the pinyon-juniper copse left standing around the quarter-section monument. The truck trail which passes 5RB136 also passes 5RB146 on the western side of the site. There may have been some disturbance of the site by the trail as well as by the chaining. In general, outside the protected area near the monument the site is in very poor condition and its scientific and cultural values have been destroyed.

Artifacts. As with its near neighbor, 5RB146 has a relatively limited artifact inventory. Only three waste flakes could be found in the area, indicating rather limited use of the site.

Two projectile points (Figures 4b and c) were found at 5RB146. The first (catalog no. 5RB146.1) is a triangular-bladed diagonally notched specimen. The blade margins are straight and very lightly serrated. The notches are wide and deep, producing an expanding stem. The basal

margin is slightly concave. The tip, one tang, and both barbs are broken. The point is generally comparable with type W18 from Danger Cave (J.D. Jennings, 1957:115) and with some points from levels 2 and 3 of the Taylor site (Wormington and Lister, 1956:Figures 40, 41), a site on the Uncompahgre Plateau near Whitewater, Colorado. At Danger Cave, the style dates from about 7010 B.C. to 1869 B.C. (J.D. Jennings, 1957:93 and Figure 38). No dates are assigned to the Taylor site materials.

The other projectile point (catalog no. 5RB146.3) is more difficult to find in the relevant literature. The specimen is triangular but slightly asymmetrical: one blade margin is straight while the other is convex. Both edges of the blade are lightly serrated. The stem is broken off but the barbs remain, indicating that the point had deep narrow notches which formed an acute angle between the long axes of the notches and the long axis of the blade. Comparison with the projectile points recovered from other sites in the neighboring regions revealed only one similar specimen. This came from the Moore and Casebier sites on the Uncompahgre Plateau near Delta, Colorado (Wormington and Lister, 1956: Figure 8a). No dates were assigned to this type at the Moore and Casebier sites.

Finally, a single scraper fragment (catalog no. 5RB146.2) was also found at the site. The tool was made of a flake of jasper which still has cortical material remaining on the edge opposite the working edge. The retouched margin forms an acute angle and the remaining portion is less than 1 centimeter long.

Cultural Affinities and Dating. There is no evidence from 5RB146 which indicates what the cultural ties of its inhabitants may have been. The dating of the W18 types at Danger Cave indicates that the site may have been occupied relatively early in the basin's prehistory. However, Danger Cave is several hundred miles west of the Piceance Basin, near Wendover, Utah. Even if several centuries of difference in time of occurrence are allowed between the two sites, the implication that

5RB146 was occupied before the beginning of the Christian era is quite clear. The site is thus assigned to the Archaic Period and probably falls near the middle of the period.

Evaluation and Recommendations. The sparse artifactual yield of 5RB146 is indicative of limited use of the site and implies that it has a low potential value either as a source of information that will help to fill in the frail outline of Piceance Basin prehistory or as an example of the kind of settlement occupied during the middle portion of the Archaic Period. Consequently we recommend that no further action be taken regarding this site unless it is to be endangered by development. If the portion of the site which is within the undisturbed area around the quarter-section marker is to be altered in any way, we recommend that limited testing be carried out to verify the assumptions made here. The site warrants, as nearly as can be estimated from the surface collections, neither nomination to the National Register nor intensive excavation.

5RB147

Location. T3S, R97W, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2; near the northwestern corner of the tract (Figure 2). The spot is about 640 meters south-southeast of the confluence of Willow Creek and Scandard Gulch on the ridge dividing the two drainages.

Topographic Situation. The site is in a ridge-top situation similar to that of 5RB136 and 5RB146, but in this case the ridge is considerably greater. The site is also southeast of a sizable sandstone outcrop which rises 3 or 4 meters above the site. The site has a good view of Scandard Gulch and the tract area to the east. The eastern exposure is ideal in that it permits the area to receive direct sunlight early in the day and yet it is protected from the prevailing winds from the north and the west.

Features. No stationary cultural objects were observed at 5RB147, nor was there any other evidence to indicate that fire pits, house floors,

or storage structures would be present but not observable.

Condition. Because this area has been subjected to chaining, much of the site has been extensively disturbed. The cultural material collected from the site was concentrated near the base of the sandstone outcrop sheltering the site, an area which showed less disturbance than other parts of the potential area of occupation. Generally, the site has been subjected to considerable disturbance and is considered to have been destroyed.

Artifacts. The site produced four waste flakes and a small fragment of the blade of a knife or projectile point (catalog no. 5RB147.1). The tool is far too fragmentary to be compared with materials from other sites.

Cultural Affinities and Dating. The lack of diagnostic cultural material precludes either the determination of the cultural ties of the former occupants of the site or the time of that occupation. The site has been included with the prehistoric sites because of the lack of items which would identify it with the Protohistoric Period.

Evaluation and Recommendations. This site is of no scientific value and has no historical significance. The site should receive no further attention and should not be nominated to the National Register.

EURO-AMERICAN SITES

5RB67

Location. T3S, R96W, NW $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 21; the site is just outside the southeastern extremity of the tract (Figure 2). The location is about 900 meters upstream from core hole SG-14, on the Middle Fork of Stewart Gulch, and about 2.2 kilometers from the Middle Fork and East Fork confluence.

Topographic Situation. The site is located on an alluvial fan spreading

across the bottom of the Middle Fork canyon from a tributary which flows in from the east. The location is on the eastern side of the canyon, about midway between the arroyo cutting the canyon floor and the sandstone cliffs which form the eastern canyon wall. The site is exposed to the north, south, and west.

Features. The site consists of a cement-chinked log cabin, a dugout, and a thin scatter of historic trash. An abandoned irrigation ditch also crosses the site.

Condition. The cabin has not been in use for many years and is in a bad state of repair. All the windows are broken, the door is missing, and the roof is showing signs that it will soon collapse. The roof of the dugout has already partially collapsed. The site can be said to be in poor condition, though there are no signs of disturbance of the deposits which might contain evidence of earlier historic occupation.

Artifacts. Materials collected from the site include a number of beer cans dating from the late 1940s and early 1950s, as well as pottery and glass shards. No other material of significance was noted or collected.

Cultural Affinities and Dating. The site is obviously of Euro-American origin. The last significant use of the site, as indicated by the beer cans, must have been about 25 years ago. The time of the earliest occupation has not yet been established. Archival research is not yet complete for the historic sites, but it seems likely, judging from the round-headed wire nails used in the construction of the cabin, that the site was built after the turn of the century and perhaps no earlier than the 1920s.

Evaluation and Recommendations. The site has no apparent potential for nomination to the National Register and no action to do so will be taken. There are numerous such sites scattered over the region and many of them are in better condition and have longer periods of occupation than 5RB67. No further action need to be taken to protect or conserve this site.

ISOLATED FINDS

Projectile Points

Three projectile points that were collected from the tract area could not be associated with any other artifactual materials. These artifacts, as with the other isolated finds, were probably lost or discarded at the places where discovered. The scattering of isolated artifacts over a large area is consistent with our findings from other parts of the Piceance Basin (C.H. Jennings, 1974).

Isolated Find 109. This projectile point (Figure 4d) was found just off the main tract road in T3S, R96W, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 17 on a small bench extending into the West Fork of Stewart Gulch.

The point is nearly complete, missing only its tip, and shows well-controlled pressure flaking. The blade is triangular and has slightly convex margins. The notches are diagonal and are about as wide as they are deep. The base is convex and the stem is slightly expanded.

The most similar previously recorded type is the Rose Spring Corner-Notched, such as those found by Aikens (1970:35) at Hogup Cave in northwestern Utah. Similar points have also been found at the Taylor site in levels 2 and 3 (Wormington and Lister, 1956:Figures 40, 41), at Danger Cave in the most recent deposits (J.D. Jennings, 1957:93, 129, Figure 38), at various Fremont sites in Dinosaur National Monument (Breternitz, 1970:5, 18, 53, 64), and in other sites in the Monument where the type is found in the later Fremont levels of multicomponent occupational series (Jennings and Wade, 1970:88; Lister, 1951:15, 38-41). In all the above-noted cases the indications are that the point type described here appears after the beginning of the Christian era but probably sometime before A.D. 1000.

Isolated Find 112. This is a broad though still triangular-bladed point with slightly convex margins (Figure 4e). It is diagonally notched,

but the notches are more nearly perpendicular to the long axis of the blade than in the case of IF109. The stem is expanded and the base convex. The specimen is nearly complete, with only the extreme portion of the tip missing. This point was found in T3S, R96W, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 7.

Comparison with other areas indicates that this point type is widely distributed. The type appears in preceramic, or pre-Fremont, contexts in several sites in Dinosaur National Monument (Breternitz, 1970:5; C.H. Jennings and Wade, 1970:87-88; Leach, 1970b:129-130). The Elko Corner-Notched points from Hogup Cave (Aikens, 1970:35, Tables 2 and 4, Figure 24) are identical to IF112 and date approximately between 1250 B.C. and A.D. 1330. The extreme dates given above should be regarded as those which will certainly include the span of popularity of the type and may represent a considerably longer period than the type was actually in vogue. The type has also been found in the less tightly dated contexts of the Taylor site (Wormington and Lister, 1956:Figure 41) and Danger Cave (J.D. Jennings, 1956:118).

Isolated Find 113. This point (Figure 4f) was found in T3S, R96W, NW $\frac{1}{4}$ -SE $\frac{1}{4}$ Sec. 18 on the rim of a bench overlooking Sorghum Gulch from the east. The tool is triangular-bladed with straight margins. The notches have been made in the sides rather than the corners of the point, but they differ from one another in size and orientation to the long axis of the blade, making the point assymetrical in silhouette. Also, the angles formed between the blade margins and the central axis are not equal, further enhancing the assymetry. The base is sinuous in form because of the removal of several rather large thinning flakes from the base. The flaking is generally not well controlled, which may be because of the nature of the material, quartzite, rather than the lack of skill of the maker.

Comparison with other areas follows much the same pattern of distribution as was the case for IF109 and IF112. Similar points have been found in Dinosaur National Monument (Breternitz, 1970:5, 19, Figure 141),

in the Wendover, Utah, area (Aikens, 1970:36; J.D. Jennings, 1957:119), and on the Uncompahgre Plateau (Wormington and Lister, 1956:Figure 41). In all cases the chronological context appears to be the same as that for IF112. At Hogup Cave, though, the Elko Side-Notched points, to which IF113 is analogous, reach their peak of popularity earlier than do the Elko Corner-Notched points (Aikens, 1970:Figure 24, Table 4). The radiocarbon dating from Hogup Cave for this type indicates an age between the fifth and fourth millenniums B.C. Consequently IF113 may indicate a somewhat earlier use of Tract C-b than does IF112.

Other Chipped Stone Tools

Isolated Find 110. This is a simple flake which has been retouched for a short distance along one margin on both faces (Figure 4g). It most likely served as a knife rather than a scraper. This assumption is based on the bifacial retouch and the acute angle formed by the two retouched faces at the working edge. The object was found in T3S, R97W, Sec. 25 (1/16th section information was not recorded for this specimen, which was found while examining the alignment of a core-hole access road). This kind of object is quite common in prehistoric sites from all time periods and in many parts of the world; the diagnostic value is nil.

Isolated Find 111. This tool (Figure 4h) is of interest not because of its diagnostic value but because tools of this kind are relatively rare in the Piceance Basin. The tool is a combination form. It has an acutely retouched working edge along one of its longer edges and a very steeply retouched working edge on one of the shorter edges. The more steeply retouched surface is on the distal end of the flake and has been worked into a finely but unifacially retouched point where the distal and the generally unretouched lateral margins meet. The retouch is all on the dorsal face of the flake, and there is obvious evidence of polishing at the retouched point on the ventral surface of the flake.

The conclusion is that the tool is a combination side and end scraper which also had an intentionally produced graver tip. Similar tools have been found at Swelter Shelter in Dinosaur National Monument in the pre-Fremont levels (Leach, 1970:131). The tool was found in T3S, R97W, SE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec. 2.

Isolated Find 114. This specimen (Figure 5a) is a core from which the flakes for manufacture into tools were removed. It was found in T3S, R97W, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 2. The object is a water-worn quartzite cobble of about double-fist size. There are three flake scars on one of the altered surfaces and two scars on the other. The sharp edge formed where the scars meet shows no evidence of wear, which would indicate that the specimen served some other function than as a core. The object is not suitable for dating.

Isolated Find 117. This is a very small fragment of a bifacially chipped tool. It was found in T2S, R96W, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 31 on a point overlooking the Piceance Creek flood plain from the north side of the valley. The find was made by Mr. Don Tait of the Atlantic Richfield Company and turned in for analysis. Unfortunately, the specimen is too small to identify, but it does indicate that there are probably sites on the north side of Piceance Creek as well as on the south.

Ground Stone Tools

Isolated Find 115. IF115 is a subrectangular mano, or hand stone, which was used in the processing of nuts and seeds into meal (Figure 5b). Such objects are found in Archaic and later sites in all parts of the deserts of the West, and they have little value as either temporal or cultural diagnostics.

This specimen was intentionally prepared in that the nonworking faces or edges were also pecked and ground until the desired shape was reached. The mano has two working faces, the top and bottom faces, both

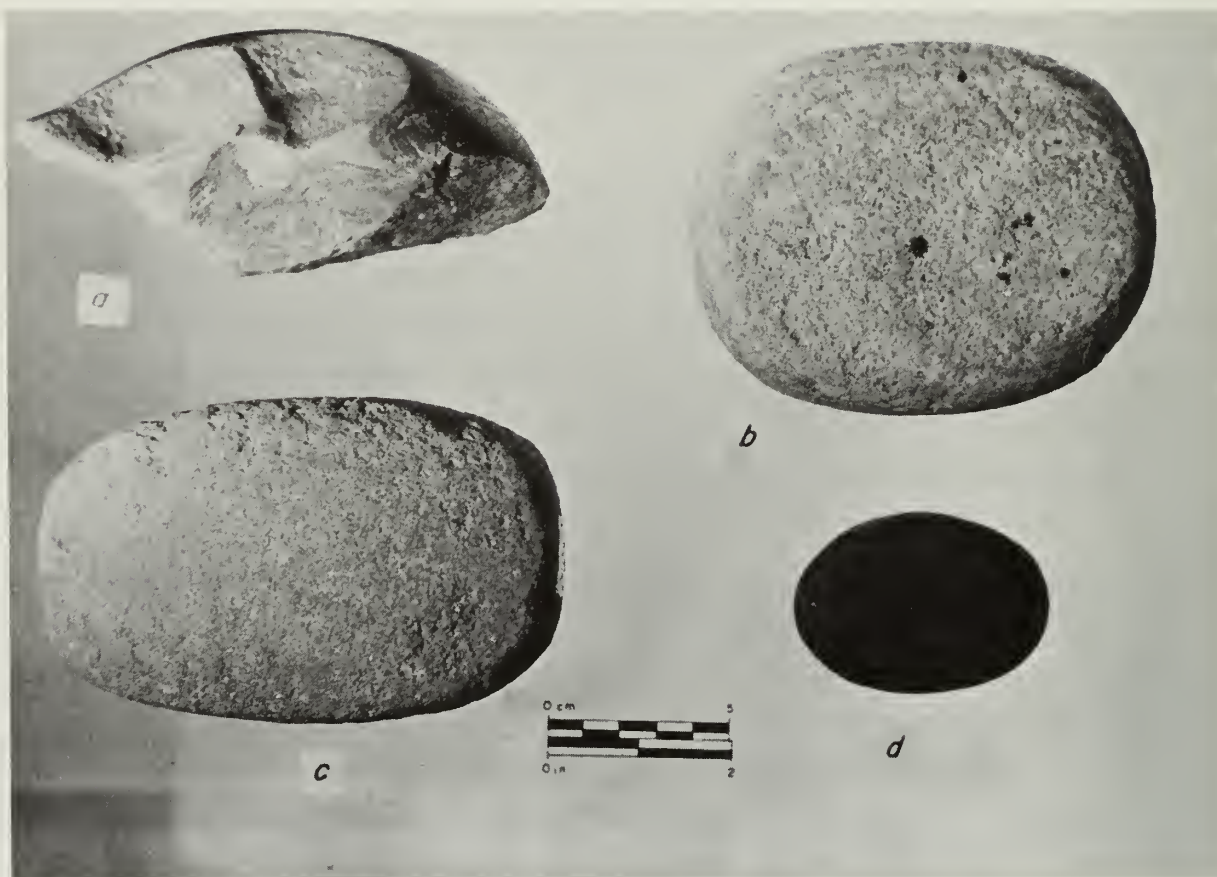


Figure 5. CORE AND HAND STONES FROM TRACT C-b

- a* IF114
- b* IF115
- c* IF116
- d* IF118

of which show considerable polish and which have been lightly pecked to increase their abrasive qualities. The tool is made of a quartzite cobble and is about the right size for one-handed use.

The tool was found in T3S, R97W, NW $\frac{1}{4}$ SE $\frac{1}{4}$ Sec. 11. To find a hand stone without any other artifactual material seems unusual in the light of our other work in the region. In other parts of the basin we rarely found ground stone tools out of association with sites. Careful examination of the general area from which the mano came produced no other artifactual material, and the isolation of the mano must be accepted.

Isolated Find 116. This is another mano (Figure 5c) and differs from IF115 in that it has only one working face and is longer in proportion to its width. All of the considerations noted above apply to this specimen as well. It was found in T3S, R96W, NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 19.

Isolated Find 118. IF118 (Figure 5d) was recovered by Dr. Warren Keammerer in T3S, R96W, NW $\frac{1}{4}$ SW $\frac{1}{4}$ Sec. 5. The specimen may be associated with 5RB146, but precise information on the location at which the find was made was not available at the time of this writing.

The specimen is a small water-worn cobble of some dense, fine-grained, black material. It shows no manufacturing or use marks but does have prominent flattened areas or facets on the two faces. It has no other features of note and has no diagnostic value.

SUMMARY AND INTERPRETATION

Tract C-b and its immediately adjacent areas have been found to contain a small cultural resource. The resource has manifested itself in the form of four prehistoric sites (three within the tract and one outside), a historic site outside the tract boundary, and several isolated artifacts found scattered over the area.

All sites are small and their artifactual yields indicate ephemeral

occupation. Two sites, however, may have some potential for improving our present understanding of man's use of the area and should be investigated further in the event they are to be endangered by future development. The others are seen as having no potential for improving our knowledge and none of the sites are deemed worthy of nomination to the National Register.

The time period represented by the sites and the isolated artifacts falls roughly between about 5000 B.C. (by radiocarbon dating) and the early 1950s. This spans the Archaic and Euro-American periods outlined in the discussion of the region's cultures. The evidence from the sites indicates that in the vicinity of Tract C-b there was no deviation from the life styles described in Section IV. The area was used first by hunter/gatherers and later by pastoralists who raised sheep and cattle.

From the foregoing we assume that the Tract C-b area was only lightly occupied. Comparison of the tract localities with those of the Stake Springs vicinity or of lower Duck Creek (C.H. Jennings, 1974), indicates that the area was evidently not on the list of preferred camping localities during prehistory. The reasons for this expression of preference are not yet clear. As indicated in the discussion of the tract's natural resources, the locality is well endowed and a paucity of subsistence resources cannot explain the low density of occupation. Further analysis of the settlement patterns in the more heavily utilized parts of the basin is necessary before we can go further toward trying to find an explanation.

Another route may also need to be investigated with respect to the low site density on Tract C-b. The chaining of the pinyon-juniper in this locality can only have had deleterious effects on the rather fragile archaeological sites. It may be that much of the evidence of prehistoric activity was destroyed by the range improvement program, which was undertaken without making any sort of cultural resource inventory. If no other reasonable explanation appears, this latter possibility may have to be recognized.

In conclusion, it is possible to say that there is no factor in the cultural resource inventory to prevent further development of the mineral resources on Tract C-b. There are some provisos to this, however, and they are discussed below.

RECOMMENDATIONS

Specific recommendations for each of the recorded sites have already been made. In summary, 5RB136 and 5RB146 are the only sites deemed worthy of future consideration in the development of Tract C-b. These two sites should be provided some protection during the development of other areas on the tract. This protection would best take the form of posting to warn off relic collectors and others who might endanger the sites. In the event that some development activity must take place near the sites (within approximately 100 meters), the sites should be test-excavated to verify the conclusions concerning their scientific value and to preserve some of their content for future generations.

The other recorded sites in and near the tract will require no further study. These sites either have very little potential or have already been destroyed by human or natural actions.

Note should be made here that there has been no systematic examination of the areas immediately adjacent to the tract. The sites recorded outside the tract and described here were found by accident rather than by design. Consequently there is no reliable way of estimating the potential value of any cultural resources that might be present there. Judging from the information collected for the tract proper, it seems likely that there will be archaeological sites adjacent to Tract C-b. It is therefore recommended that in the event that development of Tract C-b is imminent, investigation of the areas adjacent to Tract C-b, to a distance of about 1 kilometer, be subjected to systematic reconnaissance to determine the nature and extent of the cultural

resources in the vicinity of the tract. The responsibility for this extension of the archaeological study lies with the tract developers. While it is obvious that the physical development of the oil shale mining operations will not extend beyond the borders of the tract, there is a great potential for a secondary impact on the cultural resources in the adjacent areas. This secondary impact will come from the attraction of greater numbers of people to the tract area. Since the areas surrounding the tract will be subjected to greater recreational use than at the present, the potential exists for endangering sites that have not yet been discovered. Also, once an area is opened, larger numbers of relic collectors will have access to the sites in the locality. If the cultural resources in the vicinity of Tract C-b are to be conserved, it is necessary to obtain an estimate of what is present before any further damage occurs.

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Appendix A
SITE INVENTORY FORMS

ARCHAEOLOGICAL SURVEY OF COLORADO INVENTORY SHEET

White River-
Piceance Creek-

Site No 5RB67, Rio Blanco County, Colorado State Stewart Gulch Drainage

1. Prior No./Name PB 73-96 Used By CSU Regional Oil Shale Study

2. Elevation 2024 m. 3. ^{Jessup} Gulch 7½ min U.S.G.S. Quad 4 Other Map _____

5. **LOCATION** On the east side of Middle Fork of Stewart Gulch at the base of the eastern wall of the shallow canyon. The site is about 30 m.

so. of prominent tributary. U-T-M Grid 4,407,120 N. 742,130 E.
NW¼, NE¼ SEC. 21 TOWNSHIP 3S, RANGE 96W

6 Owner _____ 7 Address _____

8 Tenant _____ 9 Prior Owner(s) _____

10 Informant None 11 Address N/A

12. **NEAREST WATER** Middle Fork, Stewart Gulch Permanent, season XXXX

13. Distance to 12 91 m. 14. Elevation of 12 2017 m.

15. **LOCALE VEGETATION** Rabbit brush, Sage, Grasses, Pinyon, Juniper

16. **SITE TYPE** Hist. Archit. 17. Cultural Affiliation (if known) Euro-american

18. **Description** The site consists of a single room cabin and a collapsed dug-out about 20 m. east of the road up the Middle Fork. The structures are on the southern edge of an alluvial fan spreading from a seasonal tributary of the Middle Fork. There is a thin scatter of historic trash and an abandoned irrigation ditch also on the site. A corral is located about 50 m. north of the site.

19. Size 50 m. in diam. 20. Faces to (cardinal direction) Northwest

21. **Depth & Character of Deposits** Alluvial gravel and fines with fines in the preponderant majority. As indicated above the deposits are transported materials whose source is apparently the ridge to the east of the site. Depth of at least 5 m.

22. **Material Observed or Reported** Stack of fence poles, 1955 Chevrolet, Pick-up truck tailgate, 2 coil bed spring sets, tin cans, broken window glass, and nails.

23. **Material Collected** None

24. **Condition** Roof of cabin is bowed, windows broken, door broken.

25. **RECOMMENDATIONS** None. This site is too recent to be of any value in understanding local history. Also the site has probably been disturbed by hunters who have evidently been using the site as a camp.

26. **Photograph Nos.** None 27. **Recorded By** C. Holder, D. Hall

28. **Date** 7/9/73

SEE REVERSE
& CONTINUATION SHEET
Nos. _____

SEND TO — Office of the State Archaeologist
5-A Ketchum Hall
University of Colorado
Boulder, Colorado 80302

Site No 5RB67, Rio Blanco County, Colo. State Stewart Gulch Drainage NE¼ SEC 21, T. 3S, R. 96W Middle Fork

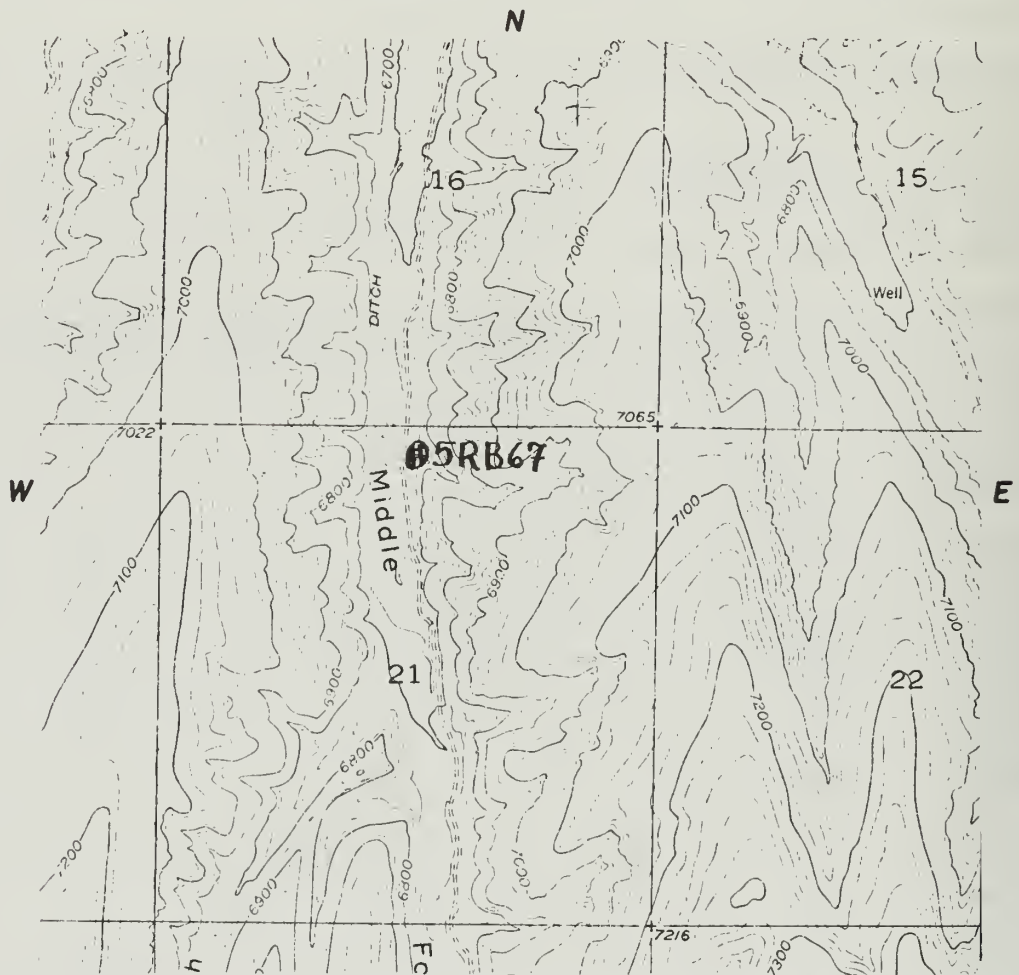
Page 1 of 2

Sketch Map of Location

Page 2

Site No. 5RB67
NW 1/4, NE 1/4 Section 21, Township 3S, Range 96W.

Indicate the chief topographic features, such as streams and elevations. Also indicate houses and roads. Enclose the site area with dotted line. If possible, show extent and kinds of vegetation and sources of other natural resources which may have influenced site selection. Attach a Xerox of portion of U.S.G.S. quadrangle map showing site location, if possible.



SCALE 1 block = 2600 (if diagram does not equal a section)

Directions to site: From the intersection of Piceance Creek Road and Colo. Highway 13 and 789 drive northwestward on Piceance Creek Road about 17.4 mi. and turn south (left) on the main Stewart Gulch road. Travel south 2.4 mi., staying to the left at the junction of Stewart Gulch and the West Fork; which is the junction of the East and Middle Fork roads. Here turn right and proceed south along the Middle Fork about 1.6 mi. to the site.

ARCHAEOLOGICAL SURVEY OF COLORADO INVENTORY SHEET

Site No. 5RB69, Rio Blanco County, Colorado State Piceance Creek White River- Drainage

1. Prior No./Name PB 73-98 Used By CSU Regional Oil Shale Study

Jessup

2. Elevation 1932 m. 3. Gulch 7+ min U.S.G.S. Quad 4 Other Map _____

5. **LOCATION** On terrace rim overlooking Piceance Creek flood plain from the south. The spot is about 350 m. east-southeast of the confluence of Piceance and Willow Creeks and about 40 m. north of the main access road to the Cb Oil Shale lease tract. U.T.M. Grid 4,413,400 N. 736,350 E.
NW1, NW1, 04 SEC. 36 TOWNSHIP 2S, RANGE 97W

6. Owner _____ 7. Address _____

8. Tenant _____ 9. Prior Owner(s) _____

10. Informant None 11. Address _____ N/A

12. **NEAREST WATER** Piceance Creek permanent xxx, season _____

13. Distance to 12 75 m. 14. Elevation of 12 1905 m.

15. **LOCALE VEGETATION** Juniper, Sage, Rabbit brush, Grasses

16. **SITE TYPE** Open Chipping 17. Cultural Affiliation (if known) _____

18. **Description** Extremely thin scatter of flakes on the rim (northern edge) of the first terrace above the Piceance Creek flood plain. The area is slightly dissected by a minor arroyo flowing northward into Piceance Creek. There has also been considerable disturbance of the surface by cattle but there is no evidence of disturbance of the subsurface deposits by construction or plowing.

19. Size 180 m x 45 m 20. Faces to (cardinal direction) North

21. **Depth & Character of Deposits** Depth is indeterminate. Deposits consist of gravels and fines with the coarser materials dominant on the face and rim of the terrace and the fines dominant south of the rim. There is no evidence of deeply buried cultural material.

22. **Material Observed or Reported** See below.

23. **Material Collected** Flakes, mano. Collection made at random from whole site area. It is likely that all of the cultural material present on the surface of the site at the time of collection was recovered. A re-visit to the site produced no more material.

24. **Condition** Surface slightly disturbed by livestock. Some erosional dist.

25. **RECOMMENDATIONS** None. This site shows no potential for improving our knowledge of the prehistory of the area.

26. Photograph Nos. _____ 27. Recorded By C.H. Jennings

28. Date 7/10/74

SEE REVERSE
& CONTINUATION SHEET
Nos. _____

SEND TO — Office of the State Archaeologist
5-A Ketchum Hall
University of Colorado
Boulder, Colorado 80302

Site No. 5RB69, Rio Blanco County, Colo. State: Piceance Cr. Drainage: NW1 SEC. 36, T. 2S, R. 97W Page 1 of 2

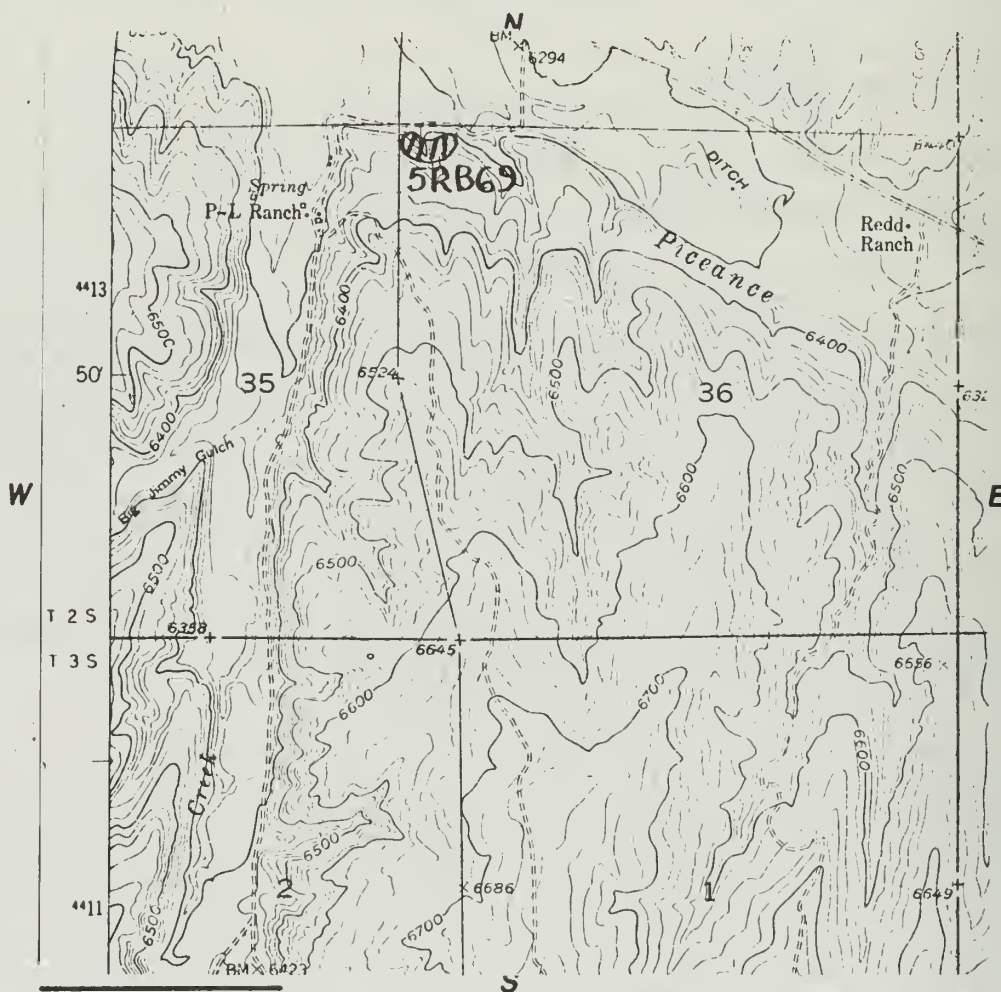
Sketch Map of Location

Page 2

Site No. 5RB69

NW1, NW1 Section 6, Township 2S, Range 97W.

Indicate the chief topographic features, such as streams and elevations. Also indicate houses and roads. Enclose the site area with dotted line. If possible, show extent and kinds of vegetation and sources of other natural resources which may have influenced site selection. Attach a Xerox of portion of U.S.G.S. quadrangle map showing site location, if possible.



SCALE 1 block = 2600 (if diogram does not equal a section)

Directions to site: Drive northwestward from the junction of Colorado Highway 13 and 789 and Piceance Creek Road along the latter for approximately 20.8 mi. This spot is the junction of the access road to the PL Ranch and Piceance Creek Road. Turn south (left) and cross Piceance Creek.; Stay to the left at the next junction and travel up to the top of the terrace. The site is located north of the road at roughly the point where it turns back to the south after travelling along the terrace in a westerly direction for a distance of about 0.1 mi.

ARCHAEOLOGICAL SURVEY OF COLORADO INVENTORY SHEET

White River-
Piceance Creek-

Site No. 5RB136, Rio Blanco County, Colorado State Stewart Gulch Drainage

1. Prior No./Name None Used By _____

2. Elevation 2054 m. 3. Jessup Gulch U.S.G.S. Quad 4 Other Map _____

5. **LOCATION** Ca. 0.8 mi. SSE of confluence of Collins Gulch and Piceance
Creek atop the ridge between Sorghum and Stewart Gulches. Ca. 0.7 SSW
of Oldland Ranch. , NE 1/4 SW 1/4 U.T.M. Grid 4,410,950 m N 740,350 m E
SEC. 5 TOWNSHIP 3S , RANGE 96W

6. Owner Public Domain 7. Address _____

8. Tenant _____ 9. Prior Owner(s) _____

10. Informant _____ 11. Address _____

12. **NEAREST WATER** Stewart Gulch permanent XXX , season _____

13. Distance to 12 1320 m. 14. Elevation of 12 1950 m.

15. **LOCALE VEGETATION** Pinyon, juniper, opuntia, Indian Rice Grass

16. **SITE TYPE** Open chipping 17. Cultural Affiliation (if known) _____

18. **Description** Sparse scatter of flakes along ridge top in moderately dense
pinyon-juniper stand. Truck trail passes west of visible portion of the
site. There is a modern trash pile near the southern end of the site.

19. Size 30 m x 10 m 20. Faces to (cardinal direction) East

21. **Depth & Character of Deposits** Sandy residual from Evacuation Creek s/s. Bed-
rock outcrops on eastern edge of site. Quite likely very little depth.

22. **Material Observed or Reported** Tin cans, broken bottles, scattered flakes,
burned bone fragments.

23. **Material Collected** Flakes, burned bone.

24. **Condition** Slightly disturbed by truck trail but otherwise evidently in
good condition.

25. **RECOMMENDATIONS** Site should be extensively tested and/or sys-
tematically surface collected if it is endangered by development. Mea-
sures should also be taken to protect it from vandalism but it should
not be nominated to the National Register.

26. **Photograph Nos.** None 27. **Recorded By** C.H. Jennings, A.P. McNamara

28. **Date** 7/20/74

SEE REVERSE
& CONTINUATION SHEET
Nos. None

SEND TO — Office of the State Archaeologist
5-A Ketchum Hall
University of Colorado
Boulder, Colorado 80302

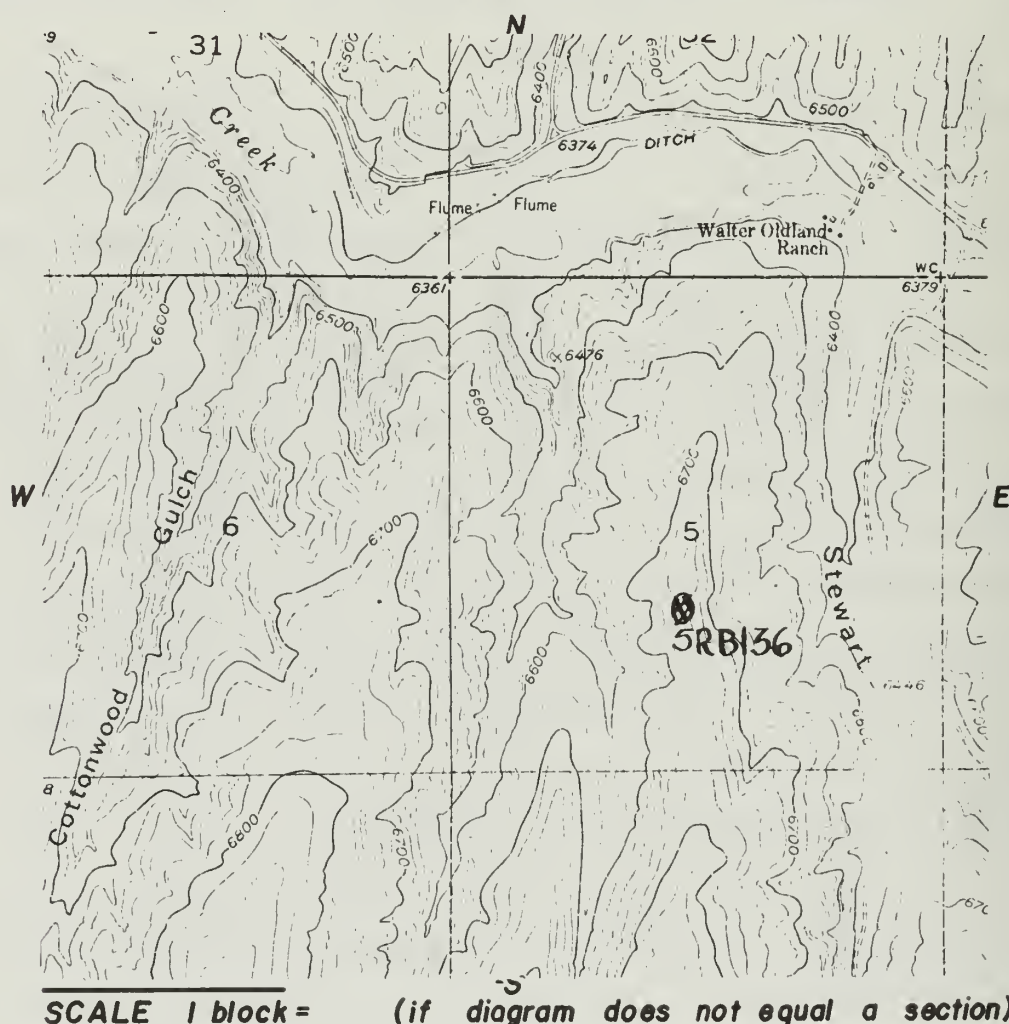
Site No. 5RB136, Rio Blanco County, Colo. State Stewart Gulch Drainage NE 1/4 SW 1/4 SEC. 5, T. 3S, R. 96W Page 1 of 2

Sketch Map of Location

Page 2

NE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 5, Township 3S, Range 96W: Site No. 5RB136

Indicate the chief topographic features, such as streams and elevations. Also indicate houses and roads. Enclose the site area with dotted line. If possible, show extent and kinds of vegetation and sources of other natural resources which may have influenced site selection. Attach a Xerox of portion of U.S.G.S. quadrangle map showing site location, if possible.



Directions to site: Turn off Piceance Creek Road at Willow Creek access road (18.8 mi. northwest of Rio Blanco). Take Cb tract access on south side of Stay left at the first two junctions on the tract access road. Drive 5.3 mi. from Piceance Creek Road to Core Hole 7 access road. Turn left (north) on to Core Hole 7 road and drive 2.65 mi. to barbed wire fence. Site is ca. 0.1 mi. further north along the truck trail and is concentrated on the right (east) side of the road.

ARCHAEOLOGICAL SURVEY OF COLORADO INVENTORY SHEET

White River-
Piceance Creek-

Site No. 5RB146, Rio Blanco County, Colorado State Stewart Gulch Drainage

1. Prior No./Name None Used By _____

2. Elevation 2066 m. 3. Jessup Gulch U.S.G.S. Quad 4 Other Map _____

5. **LOCATION** On ridgetop ca. 730 m. SW of confluence of Stewart Gulch and its West Fork and about 320 m. S of Core Hole Cb-3.

U.T.M. Grid 4,410,420 m. N 740,390 m. E
SE1SW1 or SEC. 5 TOWNSHIP 3S, RANGE 96W

6. Owner Public Domain 7. Address _____

8. Tenant _____ 9. Prior Owner(s) _____

10. Informant None 11. Address _____

12. **NEAREST WATER** Stewart Gulch permanent xxxx, season _____

13. Distance to 12 730 m. 14. Elevation of 12 1950 m.

15. **LOCALE VEGETATION** Pinyon, Juniper, sage, prickly pear, grasses

16. **SITE TYPE** Open chipping 17. Cultural Affiliation (if known) _____

18. **Description** Thin scatter of cultural material in area around quarter section monument. Much of the site area has been chained. No evidence of fire pits or other features.

19. Size Ca. 800 m² 20. Faces to (cardinal direction) Northeast.

21. **Depth & Character of Deposits** Sandy soil with scattered fragments of sandstone. Depth indeterminate but there are no outcrops of the bedrock on the site.

22. **Material Observed or Reported** Waste flakes

23. **Material Collected** Waste flakes, two projectile points, scraper fragment.

24. **Condition** Partly destroyed by chaining of pinyon-juniper cover.

25. **RECOMMENDATIONS** Site should be protected where it remains undisturbed and should be test excavated if directly endangered by future development of the tract. The site should not be nominated to the National Register.

26. **Photograph Nos.** None 27. **Recorded By** D.A. Weber, A.P. McNamara

28. **Date** August 5, 1974

SEE REVERSE
& CONTINUATION SHEET
Nos. _____

SEND TO — Office of the State Archaeologist
5-A Ketchum Hall
University of Colorado
Boulder, Colorado 80302

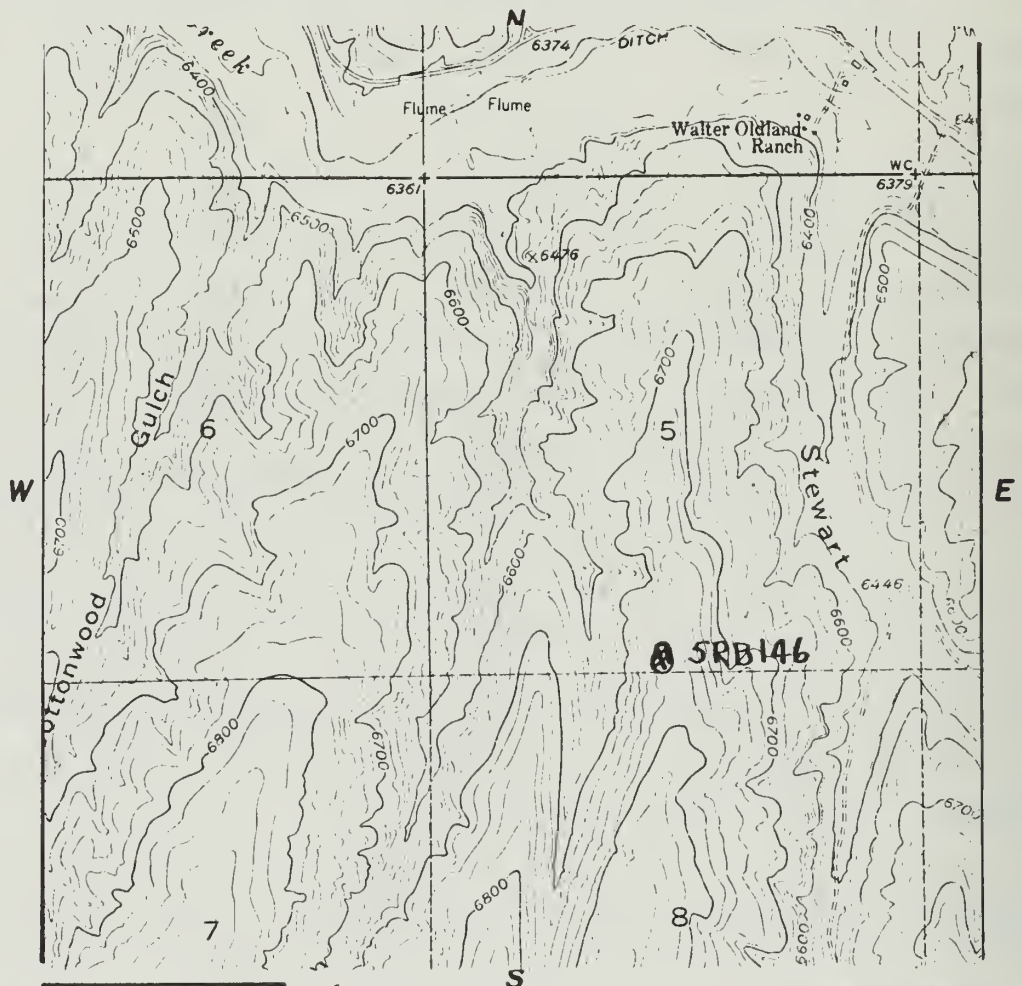
Site No. 5RB146, Rio Blanco County, Colo. State Stewart Gulch Drainage SE1SW1 SEC. 5, T. 3S, R. 96W Page 1 of 2

Sketch Map of Location

Page 2

SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 5, Township 3S, Range 96W Site No. 5RB146

Indicate the chief topographic features, such as streams and elevations. Also indicate houses and roads. Enclose the site area with dotted line. If possible, show extent and kinds of vegetation and sources of other natural resources which may have influenced site selection. Attach a Xerox of portion of U.S.G.S. quadrangle map showing site location, if possible.



SCALE 1 block = 2600' (if diagram does not equal a section)

Directions to site: Take Colorado Hwy. 13 & 789 to Rio Blanco, turn west on to Piceance Creek Road and drive 20.8 mi. to the Willow Creek and PL Ranch Road which is also the main access road to the Cb tract. Drive 0.3 mi. to first junction and stay left and continue ca. 4.1 mi. to SG-6 road; stay to right and drive another 1.4 mi. to SG-7 road and then turn left. Drive down SG-7 road ca. 1.9 mi. to boundary between Sec. 5 and 8. Site is located east of the road in the copse of trees and north in the chained area.

ARCHAEOLOGICAL SURVEY OF COLORADO INVENTORY SHEET

White River, Piceance Cr.,
Willow Creek,

Site No 5RB147, Rio Blanco County, Colorado State Scandard Gulch Drainage

1. Prior No./Name _____ Used By _____

2. Elevation 2006 m. 3. Jessup Gulch U.S.G.S. Quad 4. Other Map _____

5. **LOCATION** Southeast of Evacuation Creek s/s outcrop on ridge which is in turn southeast of the confluence of Willow Cr. and Scandard Gulch.

U.T.M. Grid 4,410,500 m N 736,880 m E
.54 mi. south of (con't), SW+SE+ of SEC. 2 TOWNSHIP 3S, RANGE 97W

6. Owner Public Domain 7. Address _____

8. Tenant _____ 9. Prior Owner(s) _____

10. Informant _____ 11. Address _____

12. **NEAREST WATER** Willow Creek permanent XXX, season _____

13. Distance to 12 230 m 14. Elevation of 12 1954 m.

15. **LOCALE VEGETATION** Pinyon, juniper, sage, prickly pear, grasses

16. **SITE TYPE** Open Chipping 17. Cultural Affiliation (if known) _____

18. **Description** Scattered flakes at base of s/s outcrop which commands an excellent view of Willow Creek and the ridge east of Scandard Gulch.

Chained trees have undoubtedly covered a good percentage of the site.

19. Size 21 m x 34 m. 20. Faces to (cardinal direction) Southeast

21. **Depth & Character of Deposits** Sandy residual material from weathered Evacuation Creek s/s. Depth may run to excess of 50 cm.

22. **Material Observed or Reported** Scattered flakes.

23. **Material Collected** 5 flakes, 1 fragment of biface of black chert

24. **Condition** Path used by livestock crosses site and it has been chained over much of its area.

25. **RECOMMENDATIONS** Test in undisturbed areas if site is endangered

Site should not be nominated to National Register.

26. Photograph Nos. None 27. Recorded By Donna C. Daniels, Morris Anderson.

28. Date 8/7/74

SEE REVERSE
& CONTINUATION SHEET
Nos. 1

SEND TO — Office of the State Archaeologist
5-A Ketchum Hall
University of Colorado
Boulder, Colorado 80302

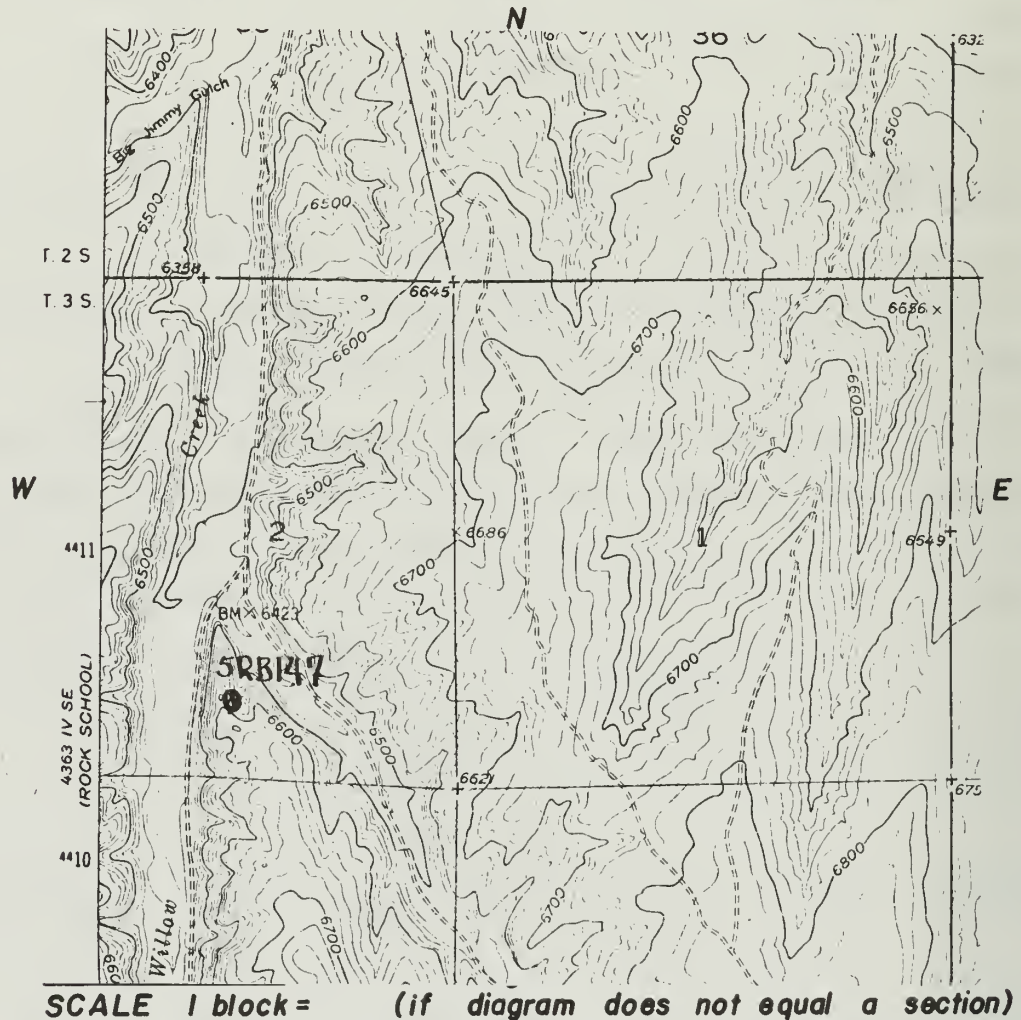
Site No 5RB147, Rio Blanco County, Colo. State Scandard Gl. Drainage SW+SE+ SEC. 2, T. 3S, R. 97W Page 1 of 3

Sketch Map of Location

Page 2

SW¹/₄SE¹/₄ Section 2, Township 3S, Range 97W Site No 5RB147

Indicate the chief topographic features, such as streams and elevations. Also indicate houses and roads. Enclose the site area with dotted line. If possible, show extent and kinds of vegetation and sources of other natural resources which may have influenced site selection. Attach a Xerox of portion of U.S.G.S. quadrangle map showing site location, if possible.



Directions to site : From Rio Blanco go northwest on Piceance Creek Road 18.8 miles. Turn right on the PL Ranch road and travel 0.5 mi. south, take west (right) fork and travel another 0.3 mi. to PL Ranch buildings and turn to south (left). Go 1.3 mi. south to intersection of Willow Creek and Scan-dard Gulch roads. The site is atop the ridge which faces into the confluence of the two drainages.

ARCHAEOLOGICAL SURVEY OF COLORADO
CONTINUATION SHEET

Page 5 of 3

Site No. 5RB147

ITEM No. COMMENT

5 the intersection of the Scandard Gulch and the Willow Creek
roads.

Site No. 5RB147

1st

CONTINUATION SHEET

Recorded by D.C. Daniels, M.R. Anderson

Date 8/7/74

SEE REVERSE

Page 3 of 3

Appendix B
CATALOG FORMS

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. S - RB - 67 . 1 (2) Cat. Name Metal
- (3) Project/Source ZP.B. 1973 (4) Analytical Name _____ By _____
- (5) Field Spec. No. _____ Date _____ (6) Cat. By RWL Date 1/7/74
- (7) Owner N/A
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU Arch. Lab.
- (10) Provenience: Horizontal T3S S.16 SESW R96W Vertical Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Rusted (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Beer can. Some markings present. Capped can.
"Country Club".
- (18) Description: L = _____ cms. W = _____ cms. T/H = _____ cms.
 Max. Diam. = _____ cms. Min. Diam. = _____ cms.
 Material(s) Metal
 Technique(s) of manufacture Industrial
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 - RB - 67 . 2 (2) Cat. Name Metal
- (3) Project/Source P.B. 1973 (4) Analytical Name _____ By _____
- (5) Field Spec. No. _____ Date _____ (6) Cat. By RWL Date 1/7/74
- (7) Owner N/A
- | Name | Address | City | State | Zip |
|----------------------------|---|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU Arch. Lab.</u> | | | |
- (10) Provenience: Horizontal T3S R96W S.16 SESW Vertical Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Rusted (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks "Budweis--" Lager B---". Beer Can, rimmed at both ends.
- (18) Description: L = _____ cms. W = _____ cms. T/H = _____ cms.
 Max. Diam. = _____ cms. Min. Diam. = _____ cms.
 Material(s) Metal
 Technique(s) of manufacture Industrial
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 -RB - 67 . 3 (2) Cat. Name Metal
- (3) Project/Source P.B. 1973 (4) Analytical Name _____ By _____
- (5) Field Spec. No. _____ Date _____ (6) Cat. By RWL Date 1/7/74
- (7) Owner N/A
- | Name | Address | City | State | Zip |
|----------------------------|---|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU Arch. Lab.</u> | | | |
- (10) Provenience: Horizontal T3S R96W S.16 SESW Vertical Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Rusted (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Might be a carnation milk can.
-
- (18) Description: L = _____ cms. W = _____ cms. T/H = _____ cms.
 Max. Diam. = _____ cms. Min. Diam. = _____ cms.
 Material(s) Metal
 Technique(s) of manufacture Industrial
-
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 - RB - 67. 4 (2) Cat. Name Metal
- (3) Project/Source P.B. 1973 (4) Analytical Name _____ By _____
- (5) Field Spec. No. _____ Date _____ (6) Cat. By RWL Date 1/7/74
- (7) Owner N/A
- | Name | Address | City | State | Zip |
|---|---------|------|-------|-----|
| (8) No. of Pieces <u>1</u> | | | | |
| (9) Pres. Storage <u>CSU Arch. Lab.</u> | | | | |
| (10) Provenience: Horizontal <u>T3S R96W S.16 SESW</u> Vertical _____ Surface _____ | | | | |
| (11) Stratigraphic Association(s): <u>None</u> | | | | |
| (12) Condition <u>Rusted</u> | | | | |
| (13) Preservatives <u>None</u> | | | | |
| (14) Photo Cat. No. _____ | | | | |
| (15) Pub. Illust. No. _____ | | | | |
| (16) Pub. Reference _____ | | | | |
| (17) Misc. Remarks <u>"Country Club"-- beer can. Capped and identical to 5RB67.1.</u> | | | | |
| (18) Description: L = _____ cms. W = _____ cms. T/H = _____ cms. | | | | |
| Max. Diam. = _____ cms. Min. Diam. = _____ cms. | | | | |
| Material(s) <u>Metal</u> | | | | |
| Technique(s) of manufacture <u>Industrial</u> | | | | |
| (19) Sketch (use back if necessary): | | | | |
| (20) Scale of drawing <u>1:1</u> | | | | |

COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 -RB - 69 . 1 (2) Cat. Name Non-indigenous cobble
- (3) Project/Source F.B. 1973 (4) Analytical Name _____ By _____
- (5) Field Spec. No. _____ Date _____ (6) Cat. By R.W.L. Date 11/16/73
- (7) Owner N/A
- | Name | Address | City | State | Zip |
|----------------------------|--|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU Arch. Lab</u> | | | |
- (10) Provenience: Horizontal T2S R97W S.36 NWNW Vertical Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Complete (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Roughly circular in shape and exotic.
-
- (18) Description: L = n/a cms. W = N/A cms. T/H = N/A cms.
 Max. Diam. = 11.75 cms. Min. Diam. = 10.72 cms.
 Material(s) Reddish-brown sandstone
 Technique(s) of manufacture Natural
-
- (19) Sketch (use back if necessary): (over) (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 RB - 69 . 2 (2) Cat. Name Exotic river cobble
 (3) Project/Source P.B. 1973 (4) Analytical Name _____ By _____
 (5) Field Spec. No. _____ Date _____ (6) Cat. By R.W.L. Date 11/16/73
 (7) Owner N/A
 Name _____ Address _____ City _____ State _____ Zip _____
 (8) No. of Pieces 1 (9) Pres. Storage CSU Arch. Lab.
 (10) Provenience: Horizontal T2S R97W S.36 NWNW Vertical Surface
 (11) Stratigraphic Association(s): None
 (12) Condition Complete (13) Preservatives None
 (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
 (16) Pub. Reference _____
 (17) Misc. Remarks Exotic river cobble.

- (18) Description: L = N/A cms. W = N/A cms. T/H = 4.51 cms.
 Max. Diam. = 7.42 cms. Min. Diam. = 7.40 cms.
 Material(s) Tan quartzite
 Technique(s) of manufacture Natural

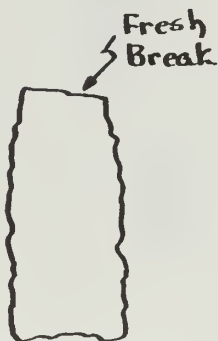
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

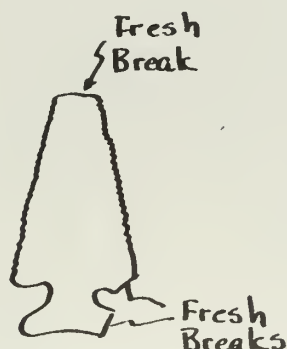
- (1) Cat. No. 5 -RB -136 . 1 (2) Cat. Name Biface Frag.
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 2/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU-LOPA
- (10) Provenience: Horizontal T3S. R96W. NW1/4 SE1/4 S.5 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken: Tip missing (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Found in the immediate vicinity of 5RB136 and assigned to that site by CHJ. Listed as IF-CHJ-8-5-2 in DAW and AFM notes.
- (18) Description: L = 3.37 cms** W = 1.60 cms. T/H = 0.70 cms. **Broken in this dimension.
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Mottled brown and black chert.
 Technique(s) of manufacture Prob. only percussion flaking. No edge grinding.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 - RB - 146 . 1 (2) Cat. Name Projectile Point
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU-LOPA
- (10) Provenience: Horizontal T3S, R96W, SW¹/₄SE¹/₄, S.5 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Tip, both tangs, 1 corner broken. (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as CHJ-IF-8-5-1 but later assigned to 5RB146 by CHJ. Triangular blade, straight edges, corner notched, slightly concave base, lightly serrated blade edges.
- (18) Description: L = 3.27 cms.** W = 1.72 cms.** T/H = 0.46 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Gray chert
- Technique(s) of manufacture Only pressure scars remain.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. 5 - RB - 146 . 2 (2) Cat. Name Scraper
- (3) Project/Source 74-4 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|----------------------------|-----------------------------------|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU-LOPA</u> | | | |
- (10) Provenience: Horizontal 1T3S, R96W, SW $\frac{1}{4}$ SE $\frac{1}{4}$, S. 5 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally collected as CHJ IF-5-1 by DAW, APM, & JLP. Assigned to 5RB146 by CHJ. Unifacially retouched on one margin. Cortex present on edge opposite retouching. Bulb or percussion and other landmarks missing.
- (18) Description: L = 1.60 cms** W = 1.28 cms** T/H = 0.43 cms** ** Broken in this dimension,
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Jasper
 Technique(s) of manufacture Pressure retouch (?)
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

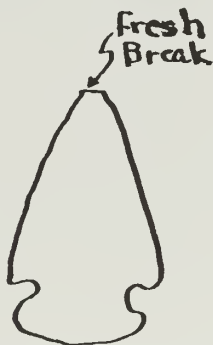
- (1) Cat. No. 5 - RB - 146 . 3 (2) Cat. Name Projectile Point
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU-LOPA
- (10) Provenience: Horizontal T3S, R96W, NE $\frac{1}{4}$ NW $\frac{1}{4}$, S. 8 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken: Stem and base missing (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded at CHJ IF-8-3-2 in DCD notes. Found on opposite side of pinyon-juniper stand from 5RB146.1 and .2 and south of $\frac{1}{4}$ sect. monument. Triangular blade with one straight and one convex margin. Both edges lightly serrated. Corner notched but basal form cannot be determined.
- (18) Description: L = 2.16 cms ** W = 1.53 cms. T/H = 0.26 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Brown mottled chert.
- Technique(s) of manufacture Only pressure scars remain.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. XX - XX - IF . 112 (2) Cat. Name Projectile Point
- (3) Project/Source 74-4 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|----------------------------|-------------------------------------|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU - LOPA</u> | | | |
- (10) Provenience: Horizontal T3S, R96W, NW $\frac{1}{4}$ SE $\frac{1}{4}$, S. 7 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken: Extreme portion of tip missing (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Found in NE $\frac{1}{4}$ NW $\frac{1}{4}$ SE $\frac{1}{4}$ of Section 7. Originally recorded as CHJ IF-8-4-1. Found by CHJ, KGP, DCD, APM. Triangular blade with slightly convex margins and no serration. Broad corner notches, convex base. Probably missing less than 2 mm. from total length.
- (18) Description: L = 3.48 cms** W = 2.07 cms. T/H = 0.43 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Gray chert with band of buff on one tang and corner.
Buff is mottled with gray.
- Technique(s) of manufacture Mix of pressure and percussion scars.
One deep scar on one face on base.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

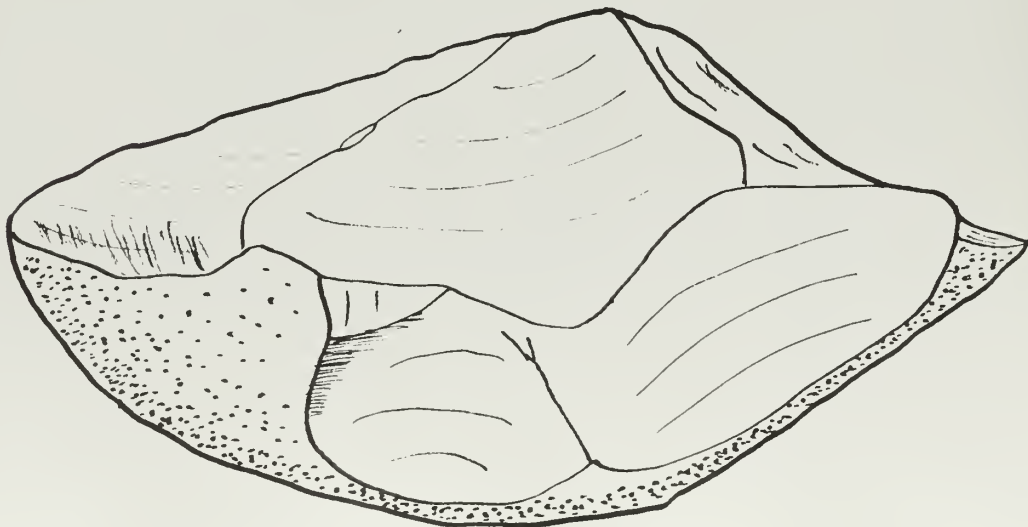
- (1) Cat. No. XX - XX - IF . 113 (2) Cat. Name Projectile Point
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. None Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU - LOPA
- (10) Provenience: Horizontal T3S, R96W, NW¹SE¹, S.18 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken: Tip of one tang missing (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as GAB IF-8-3-1. Found in SW¹SW¹NW¹SE¹ of Sec. 18. Triangular blade, straight margins, no serration. Broad, shallow corner notches; convex base with assymetrically placed notch (accidental?). Basal thinning. Probably not more than 3 mm. missing from width.
- (18) Description: L = 3.55 cms. W = 2.52 cms. T/H = 0.67 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Gray-green fine-grained quartzite.
- Technique(s) of manufacture Mix of percussion and pressure scars. One face has three long, narrow basal thinning scars. The obverse has only one which ends in a right angle step fracture.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

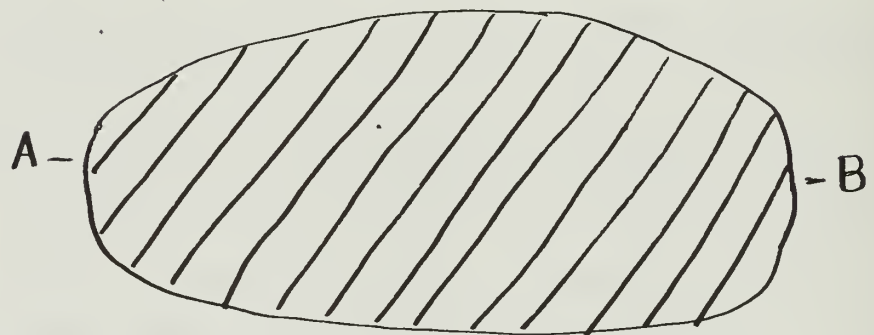
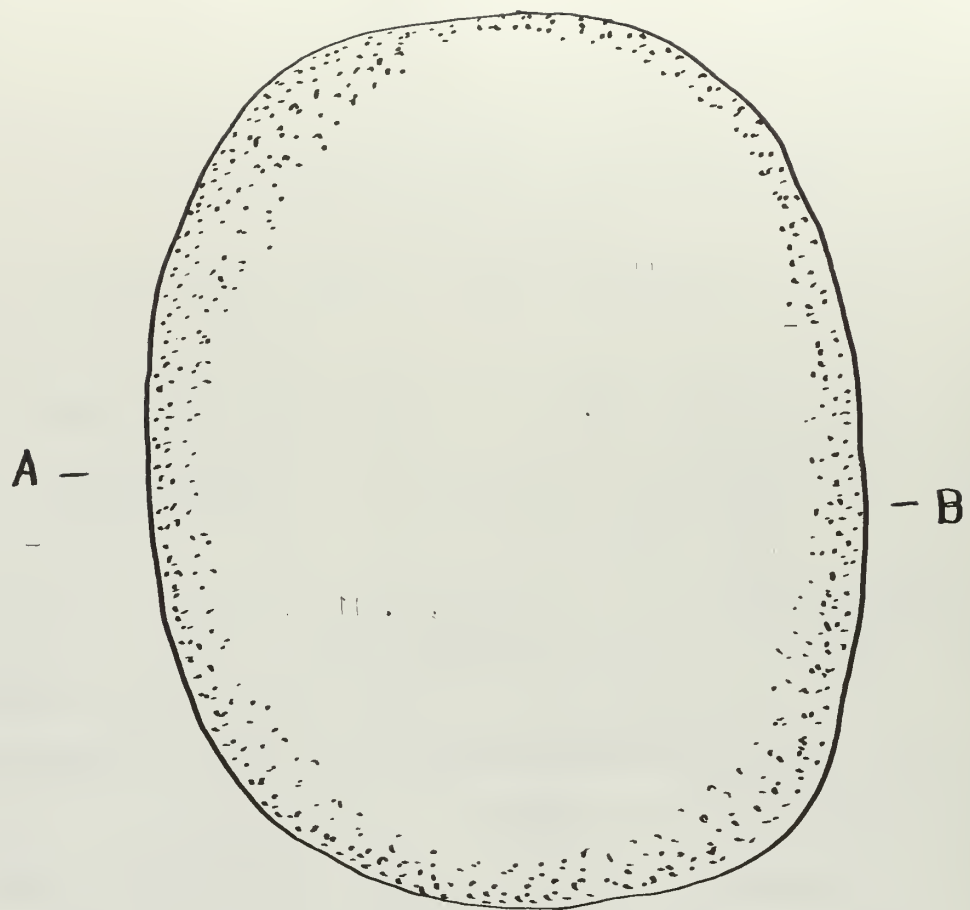
- (1) Cat. No. XX - XX - IF . 114 (2) Cat. Name Core
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU - LOPA
- (10) Provenience: Horizontal T3S, R97W, SE1/4, S. 2 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Complete (?) (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as DCD IF-8-7-2. Found in NE1/4NE1/4SE1/4 of Sec. 2
Fragment of river cobble which has had at least three large, thick flakes removed
from it. No evidence of use as any thing but a core.
- (18) Description: L = 13.8 cms. W = 6.4 cms. T/H = 4.7 cms.
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Mottled and banded gray and brown quartzite.
 Technique(s) of manufacture Percussion chipping
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

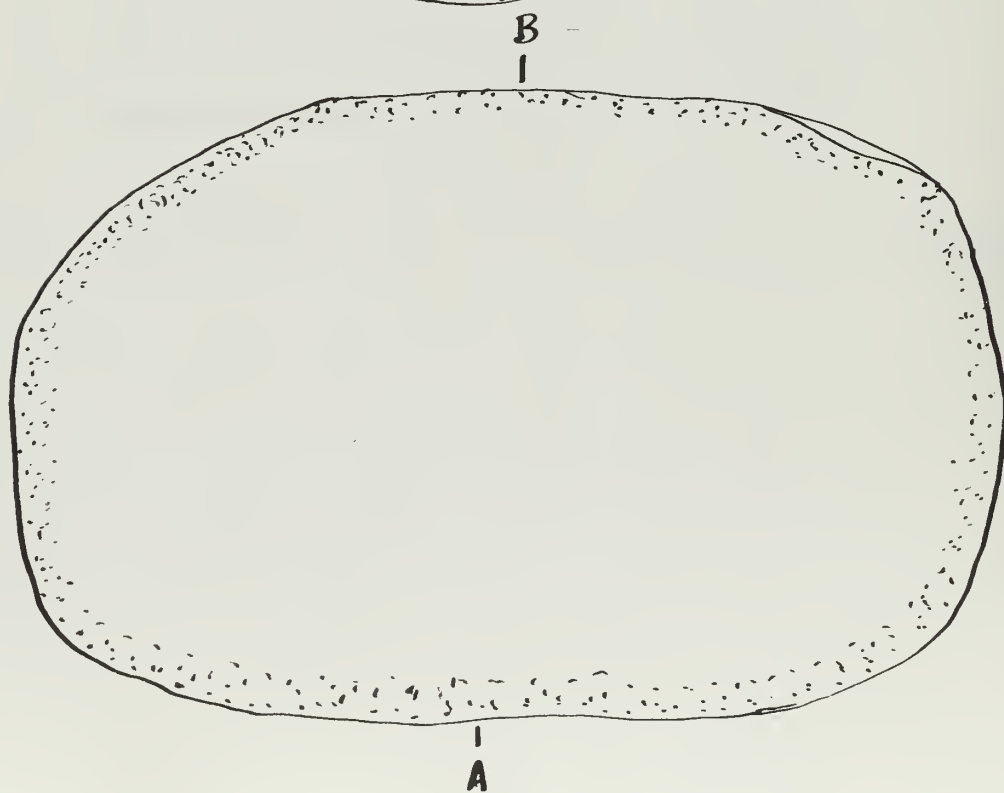
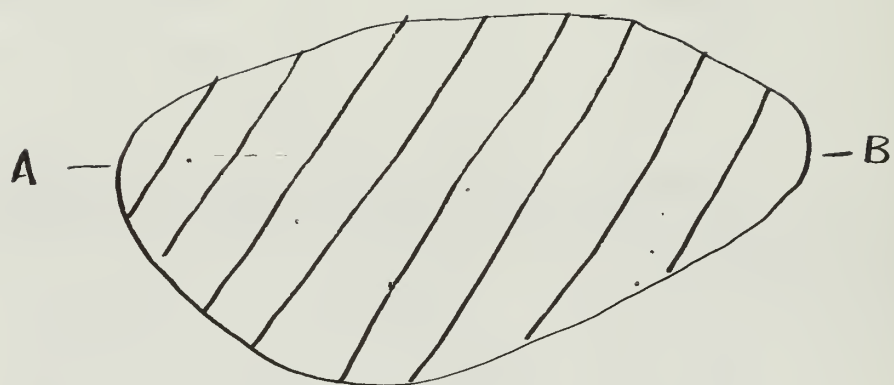
- (1) Cat. No. XX - XX - IF . 115 (2) Cat. Name Mano
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|----------------------------|-----------------------------------|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU-LOPA</u> | | | |
- (10) Provenience: Horizontal T3S, R97W, NW1/4 SE1/4, S. 11 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Complete (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as WIB IF-8-8-2. Sub-rectangular prepared tool. Bifacially polished; one face smooth, the other pecked. Grinding facets perpendicular to the plane of the two faces appear on either end.
- (18) Description: L = 12.1 cms. W = 9.8 cms. T/H = 4.4 cms.
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Brown and buff banded medium grained quartzite.
 Technique(s) of manufacture Pecking and polishing
-
- (19) Sketch (use back if necessary):
 (over)
- (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. XX - XX - IF . 116 (2) Cat. Name Mano
- (3) Project/Source 74-4(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
 Name _____ Address _____ City _____ State _____ Zip _____
- (8) No. of Pieces 1 (9) Pres. Storage CSU - LOPA
- (10) Provenience: Horizontal T3S, R96W, NW 1/4, S. 19 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Complete (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as CLH IF-8-4-1. Sub-rectangular prepared tool with only one working face. Grinding facets perpendicular to the plane of the working face are present at either end. Deep use caused striae are present on the working face.
- (18) Description: L = 13.4 cms. W = 8.8 cms. T/H = 5.4 cms.
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Red-brown medium grained quartzite
 Technique(s) of manufacture Pecking and polishing
- (19) Sketch (use back if necessary):
 (over)
- (20) Scale of drawing 1:1



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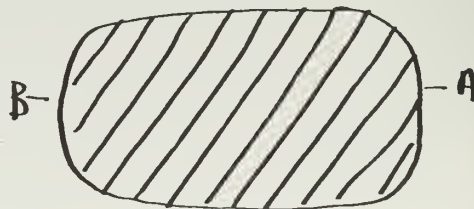
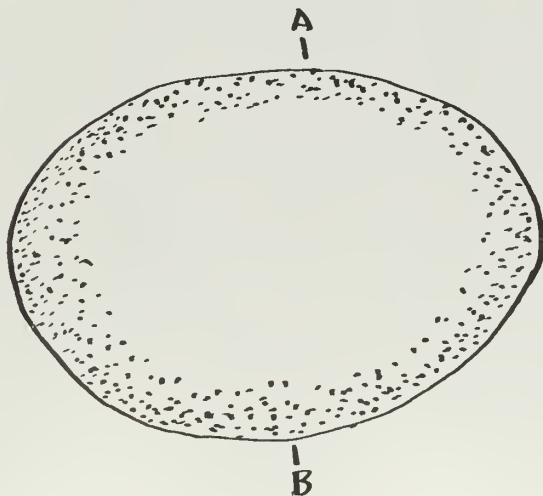
Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. XX - XX - IF . 117 (2) Cat. Name Biface
- (3) Project/Source 74--7 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU - IOPA
- (10) Provenience: Horizontal T2S, R96W, SE¹/₄ SE¹/₄, S.31 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Fragmentary (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Found by Mr. Don Tait, ARCO. See correspondence dated 11/19/74.
Object is too fragmentary to warrant further comment.
- (18) Description: L = XX cms. W = XX cms. T/H = XX cms.
 Max. Diam. = XX cms. Min. Diam. = XX cms.
 Material(s) Dark brown chert
 Technique(s) of manufacture Percussion scars only.
- (19) Sketch (use back if necessary): (20) Scale of drawing None made.

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Archaeology Catalog: Site/Isolated Find

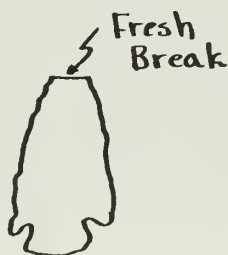
- (1) Cat. No. XX - XX - IF . 118 (2) Cat. Name Mano
- (3) Project/Source 74-7(CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU - LOPA
- (10) Provenience: Horizontal Somewhere in T3S,R96W, NW1/4, S. 5 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Complete (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Found by Dr. Warren Keammerer (part of environmental study team?). Small ovoid pebble with pronounced facets on the two faces. No evidence of intentional shapping or of pecking. Also, no signs of wear which could be unequivocally attributed to use. May simply be an exotic carried into the area but not used
- (18) Description: L = XX cms. W = XX cms. T/H = 3.2 cms.
- Max. Diam. = 7.0 cms. Min. Diam. = 5.0 cms.
- Material(s) Dark gray fine grained material, probably quartzite but heavy enough to perhaps be volcanic in origin.
- Technique(s) of manufacture Polishing (?)
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

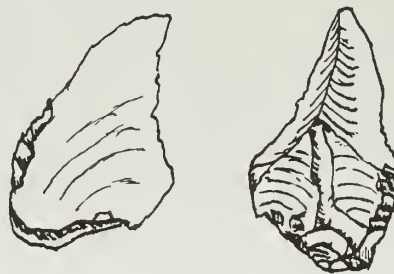
- (1) Cat. No. XX-XX - IF . 109 (2) Cat. Name Projectile Point
- (3) Project/Source 74-4 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU-LOPA
- (10) Provenience: Horizontal T39, R96W, NW1/4, S.17 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Broken: Tip missing (13) Preservatives None
- (14) Photo Cat. No. _____ (15) Pub. Illust. No. _____
- (16) Pub. Reference _____
- (17) Misc. Remarks Found near the main tract access road where it drops down the west wall of the West Fork of Stewart Gulch. Located in the SW1/4NE1/4NW1/4SE1/4 of Sec. 17. Triangular blade with slightly convex margins. Wide corner notches, stem only slightly expanding; convex base.
- (18) Description: L = 2.41 cms** W = 1.44 cms. T/H = 0.37 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Maroon chert
- Technique(s) of manufacture Only pressure scars remain. No serration of blade margins.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



COLORADO STATE UNIVERSITY

Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. XX - XX - IF . 110 (2) Cat. Name Biface
- (3) Project/Source 74-4 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N/A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|----------------------------|-----------------------------------|------|-------|-----|
| (8) No. of Pieces <u>1</u> | (9) Pres. Storage <u>CSU-LOPA</u> | | | |
- (10) Provenience: Horizontal T3S, R97W, Sec. 25 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition ~~Fragmentary~~ Complete (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Originally recorded as DCD IF-8-7-1. Sub-triangular flake with light pressure retouch of one margin, both faces, from the striking platform to about $\frac{1}{2}$ the distance to the distal end of the flake. Flake knife?
- (18) Description: L = 3.45 cms. W = 2.03 cms. T/H = 0.55 cms.
 Max. Diam. = N/A cms. Min. Diam. = N/A cms.
 Material(s) Gray/buff mottled chert. Very smooth texture, almost glassy.
 Technique(s) of manufacture Marginal pressure retouch on waste flake
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



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Archaeology Catalog: Site/Isolated Find

- (1) Cat. No. XX - XX - IF . 111 (2) Cat. Name Scraper
- (3) Project/Source 74-4 (CHJ) (4) Analytical Name _____ By _____
- (5) Field Spec. No. N /A Date _____ (6) Cat. By CHJ Date 12/27/74
- (7) Owner Public Domain
- | Name | Address | City | State | Zip |
|------|---------|------|-------|-----|
| | | | | |
- (8) No. of Pieces 1 (9) Pres. Storage CSU-LOPA
- (10) Provenience: Horizontal T3S, R97W, SE 1/4 NE 1/4, S. 2 Vertical General Surface
- (11) Stratigraphic Association(s): None
- (12) Condition Fragmentary (13) Preservatives None
- (14) Photo Cat. No. None (15) Pub. Illust. No. None
- (16) Pub. Reference _____
- (17) Misc. Remarks Found in SW 1/4 SE 1/4 NE 1/4 of Section 2. Flake is broken on long axis so that one lateral margin and part of both the proximal and distal margins are missing. Dorsal retouch of one remaining lateral margin and continues around to remaining portion of distal margin. Angle formed by longitudinal fracture and (over)
- (18) Description: L = 5.76 cms. W = 1.79 cms** T/H = 0.82 cms. **Broken in this dimension.
- Max. Diam. = N/A cms. Min. Diam. = N/A cms.
- Material(s) Translucent brown chert. Quite glassy in texture.
- Technique(s) of manufacture Pressure (?) retouch. Lateral margin has more acute working edge, distal margin steeper.
- (19) Sketch (use back if necessary): (20) Scale of drawing 1:1



distal margin has been ^eretouched into a sharp point. The retouch continues up the lateral margin formed by the fracture for a short distance. The retouch is limited to the dorsal face. The ventral face at the point shows polish (from use?).

ER'S CARD

ological

	OFFICE	DATE RETURNED

(Continued on reverse)

